THE

JOURNAL

OF THE

ROYAL ASIATIC SOCIETY

OF

GREAT BRITAIN AND IRELAND.



24588

VOLUME THE TWENTIETH.

LONDON:
BERNARD QUARITCH, 15 PICCADILLY.

M.DCCC.LXIII.

LONDON:
PRINTED BY HARRISON AND SONS, ST. MARTIN'S LANE.

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JOURNAL

OF

THE ROYAL ASIATIC SOCIETY.

ART. I.—*Sketch of the Topography of East and West Berar, in reference to the Production of Cotton.* BY CAPTAIN MEADOWS TAYLOR.

THE present province of Berar has been materially altered since its first cession by His Highness the Nizam, under the Treaty of 1853. It then consisted of two districts, called North and South Berar; the former being bounded to the north by the Satpoora mountains, and to the south by the hills which form the southern face of the valley; to the east and south-east by the Wurdah river, and to the west by the British province of Khandesh, belonging to the Presidency of Bombay. It was about 150 miles long from east to west, and from 40 to 60 broad, containing an area of about 7,500 square miles.

South of this tract was an irregular portion of country, bounded to the east and south-east by the Wurdah river, to the south and south-west by the Peyn Gunga, a tributary of the Wurdah, which in fact formed the boundary from its source to its junction with the Wurdah—which was termed South Berar. It was of a somewhat greater area than the northern province, or exceeding 8,000 square miles; but had a worse soil, thinner population, and was altogether inferior in value, yielding a revenue very much less in proportion to area than North Berar,[1] and requiring, in many respects of revenue and police jurisdiction—larger establishments.

The northern province consisted of two "Sircars" or ancient geographical divisions, provinces as they may be termed: Gawil-

[1] The proportion was about 8 to 15 lacs.

gurh to the east, Narnalla to the west. These portions were pretty nearly equal, and were divided by a line taken due south, or nearly so, from the fort of Gawilgurh. It appeared most convenient, therefore, that this line should be prolonged till it met the river Peyn Gunga, and the provinces east and west of it were called East and West Berar. This arrangement was made in 1860–1, and still remains. East Berar, therefore, consists of Sirkar Gawul, with that portion of Sircar Mahore which lies north of the Peyn Gunga. West Berar, of Sircar Narnalla, and Maikar, and that portion of Sircar Bassim which lies north of the same river. The Pergunna Nursee, which lies south of and adjoining Bassim, was doubtful when I last heard from India; but I rather think that the river boundary, though irregular in contour, will be preferred to one which has no particular indication.

I need not refer particularly to the terms of the Treaty of 1853, further than to state, that a certain sum, say 50 lacs of Hyderabad rupees per year, were required to pay the Nizam's contingent, the interest of his debt to the Company, and some Mahratta claims and stipends for which we were guarantee under the Treaty of 1822. Should any surplus arise, it was to be applied to the gradual redemption of the debt. To make up the sum required, four frontier districts were transferred to British administration, namely, the two Berars to the north, the district of Nuldroog, or Daraseo, as it was afterwards called, to the west, and the Raechore Dooab to the south: the aggregate estimated revenue of which was Hyderabad rupees 52 lacs, or thereabouts. From 1853 to 1860, however, this amount had increased very considerably, under a great extent of cultivation; and it might in any case have been a question whether we were justified in holding a greater amount of revenue than was actually needed for purposes of payment. When, therefore, a suitable acknowledgment of the Nizam's good faith during the rebellion became necessary, it was determined, among other benefits to be conferred, to cancel the old debt altogether. This, of course, reduced the demand to provision for the payment of the contingent and the Mahratta stipends only; and there was no resource but to resign to the Nizam as much of the territory first assigned to us as was superfluous to our actual requirements.

A new treaty, in 1860, or rather a revision of the old one, arranged this in a definite manner. His Highness received from us, in free gift, the principality of Shorapore, which had proved unfaithful, and had been conquered, and the districts of the Raechore

Dooab and Daraseo were entirely relinquished to him. Now, in the provinces of North and South Berar, as in the other provinces under the first Treaty, certain portions and villages, which had belonged to the Nizam himself, or to the Prime Minister, or to noblemen or others, by special grants in former times, were retained under the independent revenue management of the several parties by the title of Surf-i-Khas. This separate and divided jurisdiction was found very inconvenient in many respects; and under the new arrangement, and in consideration of what he had received back, as well as to make up the amount required for the future payments of 30 lacs per year, the Nizam relinquished all the Sarf-i-Khass territory in North and South Berar, ceding also, in perpetuity, a portion of territory upon the Godavery which was necessary in order to provide for the navigation of that river.

I need not detail the various items of Sarf-i-Khass territory so transferred; suffice it to say, that the whole of both provinces of Berar is now assigned to us, those isolated villages only excepted which were held in Jahgeer or Inam under former grants by the Nizam and his predecessors, and which were guaranteed to the holders under the provisions of the first Treaty. These, however, are comparatively few.

The accompanying tracing from Major Scott's map, which is itself a reduction from the Trigonometrical Survey Map of India, shows the provinces of East and West Berar as they now exist. The dotted line south of the Peyn-Gunga shows also the position of the Pergunna of Nursee, which was held up to the Revenue year 1861–2, but about the ultimate disposition of which I am now uncertain.

These provinces may be better described, as far as the topography is concerned, under the old division than the new; for the features of what were North and South Berar differ very materially, as well as the quality of their soils in relation to the cultivation of cotton.

North Berar, as I have said, comprised the Sircars of Gawil and Narnalla. To the north, the Satpoora hills rise to a height of 3,000 to 3,800 feet above the sea, or from 2,200 to 3,000 feet above the valley. The ridge is narrow and irregular, descending to the Taptee on the north, in deep ravines clothed with dense jungle, in which teak to some size is found, the whole tract having a very sparse population of "Gonds," and "Gowlees" (herdsmen), and but little cultivation. The descent to the valley on the south side is more abrupt, the mountains having steep scarped faces of prismatic

basalt, and the culturable soil is met with close to the ends of the spurs which, thickly wooded, descend into the plain. The mountains are exclusively of basalt; but eastwards, from near Ellichpoor, sandstone is met with through which the basalt has burst, at the period of the elevation of these mountains, as appears by the distortion of the sandstone strata and their partial vitrification when in contact with the basalt.

On the south side of the valley, the elevation of the hills is not so great, not exceeding 800 feet, at any point; nor is the ascent so abrupt. It is, in fact, the summit of one of the great Deccan plateaux, and descends to the valley by a series of steps on the north side, sloping very gently to the Wurdah and Godavery on the south and east.

The valley between these ranges has a very rich soil of great depth. Towards the hills on both sides it becomes shallower, and rests upon the basalt, which here and there crops out above the surface; but towards the centre of the valley no rock whatever is met with, and the banks of the Poorna River show escarpments of pure black soil of from 30 to 50 feet deep, while in the salt wells of Dehunda, nothing but black earth and yellowish clay is met with to a depth of 120 feet.

The whole of the valley is available for cotton cultivation. Although the soil towards the hills on both sides is gravelly, occasionally even stony, yet the crops of cotton are as fine, if not indeed finer than those on purely black soil in the centre of the valley; but the gravelly soils require a different species of cotton which has not quite so high a value as that grown upon the purely black soil, though, if the season be favourable as to rain, the produce is much larger.

In the attached map, I have endeavoured to show the areas of cotton-producing lands on both sides of the valley of North Berar; the grey colour denotes the gravelly soils, which are composed of nodules of trap and of lime kunker, mixed with coarse agates, chalcedonies, &c. It is often shallow and very light in quality, not retaining moisture; but the better qualities are a rich brown loam, resting upon beds of kunker, or, with the shallow portions, upon the basalt below. Thus, in North Berar, as the centre of the valley is reached, the substratum rock is found at a greater and greater depth, till it disappears as far as 120 to 140 feet, and the deep beds of black soil or reger are found to be resting upon yellowish and greyish white clays intermixed with beds of gravel. These portions are coloured yellow.

The soil of the southern portions of both provinces—what in fact constituted the former district of South Berar—is very different, and for the most part is unsuited to cotton cultivation, of which, comparatively speaking, there is very little. The soil near the top of the plateau is much denuded, and comparatively very shallow, except in the low bottoms of the narrow valleys, where occasional fields of cotton are met with. Where the soil however is good, grain grows better than cotton, for which perhaps the climate is too harsh; and I have observed in all the high plateaux of the Deccan, that cotton grows indifferently, is uncertain in produce, of a rough staple, yields comparatively small returns per acre, and, in fact, is grown more for local consumption than for exportation. This, perhaps, results from the comparatively high elevation of these plateaux. North Berar, which is essentially a cotton-producing district, has an elevation in the valley of from 800 to 900 feet above the level of the sea, whereas the plateaux lying to the south is from 1,600 to 2,000 feet. North Berar is a very moist, damp climate. South Berar, on the contrary, dry, and more uncertain as to falls of rain than the northern districts.

On all the small hills in the southern part of the district a low scrubby jungle prevails, and grows on a soil which is unfit for agriculture of any kind; and as these hills cover a very large proportion of the area, the population is proportionably sparse. On the Wurdah, south-east of Oomrawutte, there is a good deal of fine grass-land, all waste, with hardly any population, which might possibly be available for cotton to some extent. It would be difficult however to induce people to settle on it and to build new villages, or even to break up lands which have been so long waste. I have coloured this portion of the tract green, and the rest, in which cotton grows only partially, yellow. The original boundary of North and South Berar, which is in fact the line of hills, is marked with dots, for the sake of distinguishing the old arrangement and the difference of the two provinces.

There are two kinds of cotton in North Berar, Jhurree and Bhunnee. The former, Jhurree, grows upon the richest and deepest soil; the Bhunnee, on the more gravelly. The fibres of these two kinds are essentially different. Good Bhunnee, which is a pure white in colour, and is perhaps most esteemed in native manufactures, has a crisp strong fibre, the native test being to squeeze a portion in the hand close to the ear, when a slight crisp sound is heard. Jhurree, on the contrary, is soft and silky, and is perhaps somewhat weaker in staple. It however commands the highest

price for the foreign market. Both species bear very prolifically in good seasons and attain a considerable height; and having once had occasion to collect specimens of cotton plants, large and small, for transmission to America, I find, from my memoranda, that the following were the results:

The average height of twelve plants of Bhunnee cotton was 5 feet 6 inches.

Of eleven plants of Jhurree cotton, 7 feet 3 inches.

The average spread of branches from the stem in the above, Bhunnee, 1 foot 10 inches; Jhurree, 2 feet 4 inches.

I find that as many as 321 pods and flowers were counted upon one plant of Jhurree as a maximum, and that averages of plants of all sizes were as follows:

Jhurree, 12 plants, 126 buds, flowers and pods.
Bhunnee, 12 do. 82 do.

Jhurree produces more prolifically than Bhunnee, but the pods of Bhunnee are larger.

This proves how luxuriously the plant flourishes in Berar. The amount of yield is also satisfactory, and I give the following averages as the result of Punchayets assembled in every Talook of the district, composed of the most wealthy and intelligent farmers that could be found.

First quality crop, *cleaned* cotton, per beegah of 3,600 square yards, 45 to 60 seers, or 90 to 120 lbs.

Second quality crop, 35 to 40 seers, or 70 to 80 lbs.

Third quality crop, 20 to 25 seers, or 40 to 50 lbs.

Newly ploughed virgin soil is however known to yield from 130 lbs. to 150 lbs. per beegah, which would be the maximum. The beegah may be taken at two-thirds of an acre, so that the produce above given, would be 120 lbs. to 160 lbs. first quality—85 lbs. to 105 lbs. for second—and 53 lbs. to 66 lbs. for third quality, per acre; while exceptional returns may run as high as even 200 lbs. per acre.

In the eastern portion of Berar, and along both sides of the valley, where the soil is light, and will bear irrigation from wells, a good deal of garden produce, such as turmeric, ginger, yams, &c., is raised—the two former for exportation; as also sugar-cane for local consumption, which is necessarily large in so well populated a district. These are annual crops: and by way of rest to the land cotton is sown intermediately, followed by grain, before the land is re-manured and re-irrigated. It is in these lands that I have seen the finest crops of Jhurree cotton. The farmers say that the plant will not bear direct manuring, or too exciting a soil,

because it runs to wood, and becomes weak, which is true; but manured land, which has borne a crop, and has had water applied to it during the whole or most part of a year, is decidedly the best suited for Jhurree cotton; and some of the fields I saw, of this description, in 1857 and 1858, must have yielded returns far higher than the results given by the punchayets, which I am inclined to think underrated—the *average* being 60 lbs. to 83 lbs. per beegah, or 80 lbs. to 100 lbs. per acre, *only*.[1] The land is, however, naturally so rich that manure of the lightest description is preferred, such as the sweepings of cattle sheds, and refuse forage, intermixed with some cow-dung in the rainy season, when cakes for burning cannot be made. It is laid on in heaps, spread over the ground, and worked in with the hoe, before the rain falls. Manure is only applicable to the lighter soils; the heavy reger, or black soil of the centre valley, does not require it; indeed, if applied, it has the effect not only of exciting the soil too much, but of disintegrating it and making it too friable. Virgin soil, cleaned and well ploughed with the heavy subsoil Mahratta plough, is good for from ten to fifteen years. The surface hoe, or light plough, being used only to clear away stubble and prepare it for sowing. After that period, a perennial grass, called Hurrialee, begins to infest it, and gradually overspreads it in a few years more. The farmers then allow it perfect rest for two years if possible, and repeat the old subsoil ploughing with the same result as before. At present a great proportion of the central area of Berar, from east to west, is entirely new cultivation. The former dense Babool jungles have almost all disappeared, and given place to cotton and wheat crops of surprising luxuriance; and I question, at the rate at which cultivation has extended since the transfer of Berar to British management, whether any waste land will soon be procurable. The province, indeed, is rapidly attaining its maximum rate of production.

It must be remembered, however, that Berar must always require the production of a large quantity of grain, and that all its lands, or even an unusual proportion of them, cannot be applied to cotton

[1] In a report by Colonel Cuthbert Davidson, C.B., resident at Hyderabad, on the soil and products of Berar, and on estimate of the cost and returns of a beegah of cotton—¼ candy or 30 maunds of cotton is given as the produce per *beegah*. This, at 12 seers to the maund, would be 360 seers = 720 lbs. of uncleaned cotton, or 480 lbs. of cleaned, which appears very large, so much so as to be doubtful. At this rate the produce per acre would be 640 lbs., which is greater than any American return!

cultivation. I have before remarked that the population of North Berar is unusually large in reference to the rates per square mile for Central India generally, and there is no question that it increases. Now Berar cannot import grain, because all around it the production only suffices for local consumption, hardly indeed for that. To the north are the mountains and jungles of the Satpoora range; to the east Nagpoor, which only grows enough for its own consumption; to the south a partly unproductive country till the Godavery is approached, and the grain from thence is sent to Hyderabad. To the east is Khandesh, any surplus from which goes to Bombay. There is not, therefore now, and there never can be, any material import of cereals into Berar, which, throughout, produces grain in large quantities.

It is always difficult to estimate the actual proportion of cotton cultivation to that of cereals, and I regret to state that I cannot obtain it from Berar in time to give it with this paper, even if it be obtainable there; but an approximate calculation of probable produce of cotton may be made as follows. I make the estimates for the former divisions of North and South Berar separately, because of the great excess of non-productive land in the latter over the former, and the comparatively small area of cotton-producing land in what is culturable.

I have assumed the total area of North Berar to be 7,500 square miles, of which 1,500 being set off as an estimate of unculturable wastes, and lands unfit for cotton cultivation, 6,000 square miles, or 3,840,000 acres remain, of which, say that one-fourth, would be the maximum sum of cotton cultivation, or 960,000 acres, which, on the previous average of 90 lbs. of cleaned cotton per acre, would afford a gross produce of 86,400,000 lbs. Now, assuming the population to be one millon, and the local consumption to be at the generally estimated rate of 12 lbs. per individual per year, a residue of 74 millions of pounds would result.

Again, in relation to South Berar, which has an area of about 10,000 square miles, a more unfavourable comparison must result from the fact of the unculturable waste lands being so extensive in comparison with lands available for agriculture; but if one-fourth be culturable land, we have 2,500 square miles, or 1,600,000 acres, of which one-eighth may be fit for cotton growing, or 200,000 acres; but the produce might not exceed 50 lbs. per acre, or 10 millions of pounds, and if the population be 400,000, 4,800,000 lbs. of cotton would be required, which would leave 5,200,000 lbs. as the available surplus only.

In all, therefore, 80 millions of pounds may be the total producible quantity from both districts, or, as they are now arranged, of East and West Berar.

It is fair, however, to give an estimate made by one of the former assistants in the province of South Berar, and the truth may lie between the two. He estimates the whole province as:—

	Square Miles.
East Berar, area	10,000
West Berar	9,000
Total . . .	19,000

Of which about one-fourth is *cultivated* (not culturable) land, or 4,750 square miles, or 3,040,000 acres; and of this one-eighth as sown with cotton, or 380,000 acres; which, at an average of 70 lbs. per acre, would yield 26,600,000 lbs. of cotton. Then, if the consumption of 1,400,000 people be deducted, at 12 lbs. per head per year, there would be a residue of, say 10 millions of pounds only, which I should think considerably *below* the mark, and an average, perhaps, of the two, or, say 42 or 50 millions of pounds, may be nearer an actual result.

It is, however, next to impossible to estimate the producing capabilities of Berar, East or West. The land has not, as yet, been classified or surveyed, and until that is done, the area fit for cultivation cannot be known, much less what is fit for cotton sowing. I have no doubt that the actual area estimated to be sown with cotton this year will be obtainable from Berar, and when I receive it, I shall do myself the pleasure of forwarding it. With it also will be sent an estimate of produce calculated on the most recent returns of produce that may have been obtained.

There are, at present, two principal cotton marts in Berar, Oomrawutte and Khamgaon. Of these, Oomrawutte which has been made the civil station of East Berar, has always been a considerable place of trade, being an entrepôt for spices, salt, and coast produce in general, as well as for export of cotton and other local produce to the coast, as well as to Mirzapoor. Oomrawutte is well situated on a gravelly soil, near a small range of hills which are an offshoot from the southern range, and is marked as being 928 feet above the level of the sea. All the produce of the Pergunnas of Bunnera Beebee, Soorjee Anjengaom, Ellichpoor, Toogaom, Durriapoor, Chandore, Kolapoor, Nandgaom, Mungrool, Koora, Tulligaom, Dusèshwur, Hewurkheir, Buroor, Morchee, Surrusgaom, Manna, Joosoo, and Mortuzapore, is taken to Oomrawutte;

as well as much of the produce of those Pergunnas of Nagpoor which lie on the left bank of the Wurdah, and even of those further to the eastward.

Khamgaom is situated about 80 miles to the westward of Oomrawutte. It has not the same amount of import trade, but is a considerable entrepôt for local produce which is exported to the coast, both cotton and linseed, with madder, sesamum, and other productions in demand at Bombay. It collects the produce of the western Pergunnas of North Berar, namely, Akola, Argaom, Jamode, Julgaom, Bunneria, Mulkapoor, Balapoor, Akola, Dehinda, and Pannajee. Some cotton, linseed, and sesamum also reach it from Maiker and other Pergunnas, above the southern hills. The station of the West Berar district has been fixed at Akola, which is more central than Khamgaom, and as the railway will touch it, I have no doubt that Khamgaom will decline, or, at least will not increase.

There are other cotton marts, but of a more local character, at Balapoor, Akote, and Mulkapoor, in West Berar; and Ellichpoor, Hewurkheir, Morchee, and Surrusgaom, in Eastern Berar; but I am inclined to think there is no direct export, except from the great marts of Omrawutte and Khamgaom.

To the east of the Wurdah river, in the province of Nagpoor, there are large cotton-producing tracts, and the Pergunnas of Mangaom, Andoree, Wyegaom, Khamgaom, Natchengaom, Deolye, Ponar, Kelsee, Sindee, Bela, and Hingunghat, are as famous for their cotton as any part of Berar. These Pergunnas supply the market of Hingunghat. Another mart in the Nagpoor territory is Aroee, which collects produce from the Pergunnas of Aroee, Seyloo, Ashtee, Amnair, and Kondalee. Most of this cotton goes to Mirzapoor, as more profitable for export, perhaps, than Oomrawutte and Bombay; but the railway which will traverse the cotton-producing Pergunnas of Nagpoor, lying between the Wurdah and that city, will no doubt convey the whole of the Nagpoor as well as the Wurdah Valley produce to Bombay. The produce of Nagpoor which does not go to the west coast by the Berar Valley, or to Oomrawutte, &c., is sent direct from Hingunghat *viâ* Bassim, Jalna, and Ahmudnugger, to Bombay, but it is not very considerable.

From the above I think it may be safely assumed that agencies might be established with great advantage at Akola and Oomrawutte, with branches about the country. For instance, for Oomrawutte, a branch at Ellichpoor, which is a cantonment of the

Hydrabad Contingent, would gather produce from Anjengaom to the west and Surrusgaom to the east.

A branch at Hewurkheir or Morchee, would gather supplies from Burroor, Morchee, and Hewurkheir.

A branch at Hingunghat would supply produce from the Nagpoor country's districts lying on the left bank of the Wurdah.

A branch at Karinjah, and one at Bassim, would drain the southern districts.

So also, a minor agency for West Berar at Akolah, which, as the civil station and upon the railway, would be preferable to Khamgaom, and could have branches at Akola, for Akote, Argaom, and Bunnera :—At Mulkapoor, by which the railway will pass, for Peepulgaom, Jamode, Mulkapoor, and Rohunkhér, while Akolah would command Balapoor, Dehunda, Punnagee, Warroor, and other central Pergunnas. An agency at Maiker, above the Southern Hills, would also obtain produce, but the country is not rich.

Thus both *general* agencies would be situated upon the railway, and in communication with the best cotton districts of East and West Berar, and would also communicate with the southern portions of those districts which lie south of the range of Southern Hills, and with Nagpoor.

Though cotton might be the main object of a Company's enterprise, it is by no means to be supposed that the produce of Berar is confined to that article. On the contrary, I know of no district in which such varied productions are grown, or which is better suited by soil and climate, to all descriptions of Indian staples.

The whole of the northern and southern sides of the valley where water is near the surface, and soil is of mixed quality, produces ginger, turmeric, sugar-cane, and all other irrigated crops in great variety and luxuriance. The soil is naturally rich, and the water in the wells is near the surface. The Pergunnas in which irrigated produce is grown to the north, beginning from the eastern side, are,—Burroor, Morchee, Hewerkheir, Anjengaom, Akote, Julgaom, Argaom, Jamode, and Mulkapoor. On the south side of the valley, Tulligaum, Mungloor Peer, Karinjah, Ballapoor, and Peepulgaom. In all these localities which, from the quality of the soil, allow of irrigation being applied to agriculture, much might be done to preserve the water which at present flows to waste, by collecting it in tanks, or lakes, and making dams upon the small rivers. Such works would be within the proper province of the Company; and, to judge from the results and experiments elsewhere, in the province of Golcondah, for instance, would prove very remu-

nerative, both for the sale of the water to the people and the great stimulus they would give to irrigated produce.

In the course of a report made by me to Government upon the feasibility and necessity of providing water for agriculture in the province of Daraseo, then under my superintendence, I showed by a series of calculations founded on returns furnished by *every* collector of *every* province in the Bombay Presidency where irrigation existed, as well as from the Commissioners of the remaining three districts of the Hyderabad Commission, that the average cost of watering an acre of ground per year for sugar-cane, or any crop which requires water for a whole year, was thirty-seven rupees and a-half. The returns were obtained by punchayets of respectable farmers which sat in every talook, and the aggregate of talooks and their average was transmitted by the collector. The expense included proportions of cost of bullocks and repairs of well, feed of cattle, gear for raising water, rope, leather bucket, &c., ironwork, wages of men—the one to drive the cattle, the other to turn off the water, and the like. Now the cost of water per acre per year is about three rupees on the Ganges canal, and varies from three rupees to twelve rupees per year from tanks and dams in the Madras Presidency, according to number of crops irrigated. In the Daraseo districts, the people would have given six rupees per acre per year gladly for water, and no wonder, if they were spending thirty-six. On an occasion of a proposed "anicut" from the river Tumboodra in the Raechore Dooab, which was under my charge in 1859 and 1860, Government was offered eight rupees per acre for water on *each* crop of rice on land of first quality, or from sixteen to twenty-four rupees per acre per year. It was proved also, on data which admitted of no question, that by construction of lake or tank dams, water could be stored, to be sold at a profit, and so as to supply irrigation, at the rate of *two rupees per acre per year*, and even less.

As I have before stated, the sides of the valley of Berar, might be provided with water to a great extent by damming up the small rivers, and storing up the monsoon overflow; but, beside this, there is the Wurdah, by which, at one spot where it falls precipitously about thirty feet, and continues to fall by rapids for nearly a mile, or in all, probably, from eighty to one hundred feet, a head of water could be obtained which would irrigate the whole of the right bank as far as the water would last; and my impression also is, that if a *system* of dams, one below another, built on natural ledges of rock, as is the case in the Tumboodra, were constructed, much

of the waste unproductive tract of land lying on the right bank of this river, south-east of Oomrawutte, would be rendered very valuable. That tract, now quite or nearly uncultivated—except by a few Gonds, and used only for pasturage by wandering herdsmen—might be purchased by a company, or rented on very favourable terms, and the application of irrigation to it would at once attract a large population. I cannot say for certain that the plan is as feasible as it appears, but of the perfect possibility of putting the whole of the water of the Wurdah to use from the spot I have mentioned, which is a few miles below the Kasba Amnair, in the Burroor Talook I have no doubt, as I inspected the locality with great minuteness and for the purpose of reporting upon it, in 1858; and it is impossible but that the natural descent of the river per mile, and of the country with the river, should not furnish localities for the construction of dams to command the lands below them from spot to spot, according with the natural levels. This is the system pursued in all the rivers of the south of India, and except where the channels of the rivers are too deep to admit of it, or ledges of rocks with strong banks are not found, there is nothing, in my opinion, to prevent the water of Berar, or elsewhere, being used in a similar manner. It is, however, hopeless to expect Government to construct such works, and it is under the formation and operation of companies alone that they could be executed efficiently or worked profitably.

I think this will not be considered a digression from the subject of Berar topography and production, for it is in reality one of the greatest importance to the district. Irrigation is not applicable with any good effect to cotton cultivation, and experiments have been made which prove this beyond a doubt; but the value of sugar, tobacco, indigo, ginger, turmeric, and the like is far beyond that of cotton as a crop to the farmer, and, I should think, to the merchant also; and irrigation is necessary to all these and others. In any case, they would combine with cotton, sesamum seed (Till), linseed, and mustard seed (the demand for each and all of which has been very rapidly increasing for some years past), rape, castor oil, safflower and its seed, hemp, and other local produce required for exportation to the coast for Europe or other countries.

There is yet another subject to which I beg to be allowed to attract attention, as I think it is feasible to effect much by a little pains. I allude to the manufacture of flax from the linseed plant. The fibre may not be very long; but it will be fine, and machinery for spinning flax has been so improved of late years, that anything

a few inches long can be spun into excellent yarn. I have made several trials myself with success, and the Berar flax, growing more luxuriantly and more succulently than the flax of the Deccan usually does, yielded fibre with comparatively little trouble. Government officers, however, distracted with other business, obliged to be continually moving at the season when flax is ripe, and unable to obtain proper instruments, or to direct the process in a fitting manner, can only make very partial experiments; but a company, whose business it would be to perfect all existing productions as much as possible, might pursue the subject of flax with, I should think, much advantage. Thousands of tons must now be destroyed simply from the inability of the people to make flax, indeed, from their absolute ignorance that any fibre can be obtained from the plant, which is burned, lest cattle should eat it and be poisoned. In the Punjab, flax has already become a staple product for exportation to a considerable amount, and I have no doubt that the same result would follow in Berar, were its production systematically undertaken.

I return, however, to cotton.

It has been proved that the American species of New Orleans or Upland cottons, sown in the Deccan at Dharwar, the Raechore Dooab, Shorapore, and other localities, produce a staple as good, or nearly so, as that obtained from America. There is a slight difference in the present market price, but for the most part they range within a penny a pound of each other, the "Ginned Dharwar" having the preference in some cases. I myself had a large share in the experiments by which New Orleans seed was cultivated in the Deccan, and have seen enough of its cultivation to be assured of its not only maintaining its ground against the indigenous varieties, but of surpassing them in every respect. The acclimatized New Orleans is a hardy plant, rarely affected by the dry, withering north-east winds which so often ruin the produce of the indigenous variety; it requires no particular cultivation: no manure if sown in good black soil: is a heavy bearer, certainly one-half more than native under all circumstances, and more frequently double. It also gathers far less dirt, and the leaves being of a firmer and less friable nature, do not break in gathering the produce, as those of the indigenous varieties do, and become mixed with the wool so inextricably I am informed, that the more the wool is separated, the more are the particles of leaves broken and diffused. The proportion of wool to seed is also greatly more—nearly one-third; while, as is well known now, it not only commands a greatly

enhanced price in the market over the indigenous, but is adapted, by the length of its staple, to the use of manufactures in those spinning machines which are adjusted for American cotton without any special adjustment for itself.

This plant requires no special cultivation, nor was it till exactly the same mode of treatment was adopted with it, as was customary with ordinary cotton, that it succeeded at all. The American plans of sowing in partitions, upon ridges, in square holes, and the like, difficult of execution and involving much manual labour, would never—*could* never have been adopted by the Indian Ryot; and it was the practical Deccan farmers, at Dharwar, who, after seeing the real value of the plant, rejected the American system as too complicated, and in reality not suited to the climate because creating too much evaporation, and treated it in their own way with perfect success. This plan was adopted by me in the Shorapore State, which is not far north-east from the Dharwar boundary; and the plant was becoming a favourite crop, when I was transferred to other duty in 1853. Upon its introduction into the Räechore Dooab, which borders Dharwar and Shorapoor, it was rapidly increasing in demand and in favour when I left the district in 1860; but, I fear, as that province has been retransferred to the Nizam, that the cultivation will not be carried on so carefully—that is, without mixture of native varieties—as it was before. A want of seed was the only difficulty in 1859–60; if it had been procurable in time, a very much larger breadth would have been sown than was sown.

Now, I think this kind of plant would, after a few trials, succeed perfectly in Berar. The only objection to its cultivation in the Deccan generally is, that the climate and soil are too dry, and that if sown at the time the ordinary cotton is sown, it dries up before the produce is complete.

It must be understood here, that both the indigenous kinds in Berar, Bunnee and Jhurree, bear but one crop of flowers and produce. Some of the buds flower and form into bolls a little later than others, as might be expected on any annual plant, but there is not more than a fortnight's difference. Now, the New Orleans variety comes into flower earlier than the native plant, and bears a constant succession of flowers and bolls till the end of the hot season. The plants, particularly the hybrid varieties of the Sea Island, would, indeed, answer well another year; but they require pruning, and the crop is perhaps less prolific than that of the first year, and more liable to attacks of insects.

But great drought is not a characteristic feature of Berar; in fact, almost the contrary. It has a moister climate all the year round than any part of the Deccan with which I am acquainted, and a more unvarying supply of rain. The monsoon rarely gives less than 30 inches; sometimes, indeed, much more; and whereas for the last twenty years the average of the Deccan would not, perhaps, amount to 20 inches, certainly would not exceed it—the average of rainfall for 1855, 1856, 1857, in Berar, was 30·75 inches, and they were barely average years, and when other portions of Western India were sorely afflicted with drought. The moisture in Berar, therefore, may be attributed to the retention of the monsoon fall by the deep tenacious soils of the district, and consequent heavy evaporation afterwards, which tempers the dryness of the air, and makes it so favourable to the production of the indigenous plant; for nowhere in the Deccan proper, or in Dharwar, are such crops seen as ordinarily exist in Berar in all its localities.

From this I assume that the cultivation of the American plant would succeed if *properly* tried. I am aware that some attempts have been made which failed; but during the time I had charge of the province, I could not discover that any proper trial had ever been made, or that any one was particularly interested in the subject. American and other varieties of *imported* seed had been sent to the province, which, in most instances, had failed to vegetate; in others, had come up so sparsely, that its failure was attributed to the quality or condition of the soil or climate. The native farmers, therefore, were disappointed, and declined further experiments; the Government officers were none of them agriculturists, or cared very much about the matter in any way; and so the first trials being as unsuccessful as they had been in many other localities—at Dharwar and Shorapoor for instance, further efforts were abandoned altogether. Yet in 1857–58, I saw, in some localities, individual plants and patches of New Orleans cotton as fine as any I had experience of in Shorapoor, if not, indeed, finer; and were fully acclimatised seed used, and PERSEVERED IN until the proper treatment of the plant was ascertained, I should anticipate a certain success.

It would be a great object of any Company to make such trials. Land sufficient for the purpose *in different localities* and of different qualities, could easily be rented from Government, or waste land could be taken up and cleared for the purpose. Acclimatized seed can be obtained in Dharwar to any amount, and I would advise trials with this seed, which, so far as my knowledge goes, *has never*

yet been tried in Berar. It was my intention. had I remained in the province, to have got up seed from Dharwar in time for the early sowings in June, and I would have tried them in all the Pergunnas of Berar and on all kinds of soil,—the deep black, the mixed loams, and gravelly soils; and those soils on which irrigated produce—sugar-cane, ginger, and the like—had been grown the year before. All these should be attempted, and the results carefully noted. If the seed failed partially, or even entirely in some places, fresh seed from Dharwar should be obtained; but if any plants succeeded, even partially, that seed would be more valuable than any other for the next year's growth.

If the seed were sown in the loamy or gravelly soils of the *sides* of the valley, near the hills, the earlier it was put into the ground, the better; say as soon in June as the moisture admitted, at the same time, indeed, as the indigenous varieties. But in the very deep black soil of the centre of the valley, the seed might be sown, as it always is in Dharwar and Shorapoor, in August. It would ripen later, but it would be a stronger plant, less liable to heating and casting its bolls, than it is if sown earlier. In short, it is impossible to lay down any exact rules; but that deviation from local usage is sometimes useful, I myself had a notable example of in regard to this cotton at Shorapoor.

In the granitic formations of the western districts of India, there is a good deal of reddish loamy soil, consisting of decomposed felspar and granite, which is used for the early or "khurreef" crops of grain and pulse—*never for cotton.* I had tried early sowings of New Orleans in black soil, with bad success; and yet it appeared that greater moisture was necessary to its perfect development than could be obtained by sowing in August and September. I determined therefore (the last year that I was at Shorapoor, 1859-60), to try red soil with the plant. The result was most perfect success. The red soil seemed to suit this cotton far better than the black; the plant was not so high, perhaps, but it was much stronger, and more bushy, and the yield incomparably larger. It happened, too, that that year was scanty in supply of rain, and other native cotton was much affected; not so the field of New Orleans on red soil, which grew and flourished abundantly. This field had not been manured, and no particular pains was taken with ploughing it. The seed was thinly sown by the drill-plough, and twice weeded by hand; the plants being thinned at the same time. The field was sown early in June; it began to flower in six weeks, and ripe cotton was pulled in great plenty in the end of September; and from this time

till February, when I left, and hot weather had begun, the plant still bore a continuance of flowers and pods, which were, to me, truly surprising. If I had remained, I should have repeated the experiment on a much larger scale; and it may, indeed, have been continued by the local farmers, who came from all parts of the district to look at what they could not believe from report. The produce of this field, which was sent to the Bombay Chamber of Commerce, was declared the "*best which had ever been sent* of the American variety."

Another kind of cotton which, to my perception, seemed more suited to the climate of the Raechore Dooab and Shorapoor—in short, to a dryer climate than Dharwar—is the Egyptian. An intelligent farmer of a village on the western frontier of Raechore, had obtained some seed from a friend in the Dharwar Collectorate; it proved to be of mixed qualities; and having observed a difference between the plants, and that one kind in particular grew better than others, he saved the seed of it and sowed it separately the next year, giving also portions to other farmers of the same village. He asked me to come and look at it; and as Dr. Forbes—who has gone to India with Mr. Heywood of Manchester for an inspection of cotton districts—was with me, we went together. The field was, indeed, most luxuriant; the plants far asunder, breast high, and full of pods and flowers. I have no doubt that the result in yield was most satisfactory, and will encourage the farmers to persevere.

There are, however, prejudices among native farmers against the sowing of New Orleans cotton which are not easily overcome. The seed is not fitted for the food of cattle, like that of the native variety, which affords so much nourishment, and forms part of the value return to the cultivator—and there is difficulty about cleaning it. Many kinds of gins have been tried with varying success; but whether from its great dryness in the gin, and consequently more brittle character, or from the staple being really shorter than in America, I cannot say; but there is no doubt that the staple of all Dharwar-ginned American has been hitherto very much cut in ginning, and thereby reduced in value. After many experiments, I believe that a gin has been perfected upon the roller principle, of which Dr. Forbes is the inventor, and which promised to effect all that was desired in the improvement of the staple. It could also be made applicable to native cotton. New Orleans cotton can, however, be very well cleaned by the native hand-churka, a small gin with rollers working different ways, sometimes both of hard

wood, sometimes one of wood and one of iron. What I sent last from Shorapoor, the produce of my red-soil field, was entirely cleaned by the common churka, and was very much admired. Such a gin, however, as Dr. Forbes's is an actual necessity in the country. A factory or company would have to supply many to the people, and keep up many itself; and, under proper treatment in cleaning, the indigenous cotton of Berar would, I believe, be the best in India.

It is excellent in colour, both Bhunnee and Jhurree, and the staple of both is longer and finer than any indigenous cotton with which I am acquainted; but stored badly, picked and cleaned badly, exposed to dust, which, in Berar, is hardly to be conceived, packed badly, and finally carried badly to the coast, it is no wonder then that Berar cotton hitherto has had a bad reputation.

Within the last four years, however, there is much improvement. Officers of Government have used their utmost endeavours to induce the adoption of careful picking when the cotton is ready, not too ripe and falling from the pods, or catching all the dust which blows upon it. The storing in "kulls" or enclosed spaces near villages, to be kept till the rent was settled with exacting talookdars, is also at an end. The rent now to be paid is settled beforehand, and the Ryot can take his produce as he pleases. Above all, the farmer has come to learn that there is a better price to be got from the purchasing agent for really good cotton than for bad, and he is beginning, in Berar to take pains about the preparation of it for market. In this respect the operation of a company would be of great benefit. It would either receive the cotton in the seed and clean it in its own gins, or it would supply gins to certain localities and take the cotton as cleaned. It would maintain discrimination between good and bad cotton, and it would soon be perceived by the people, that to get the best procurable price, the best article must be furnished; not as before in quantity, without any reference whatever to quality or condition, but with reference to quality.

And as I have before stated, the principle of buying only good produce would apply to all other articles of local growth, irrigated and non-irrigated.

Another important point to be considered is, that advances, if required by the people, would be given them by a Company on much lower terms than those they now get get from local merchants and petty bankers. The manner in which the Marwarree traders of Berar make up accounts with their constituents is curiously complex, and very ruinous to the people; yet to some extent,—a

great extent, indeed,—the advances are necessary. I need not enter here into a subject which in itself has a peculiar and separate interest; but while some progress has been made by the Berar farmers to independence of the petty village banker or merchant, a great deal of necessity exists for continuance of prepayment, or loans upon time bargains. The lender is everywhere under the protection of the local law, which is not complex, nor is justice difficult of attainment. One great object of the present administration, indeed, has been to make justice as easily attainable as possible. There is no special law of contract existent; but the section "upon contracts," which forms part of Mr. Temple's Punjab Code, is administered in the province with success. I can state also, from my own judicial experience, that disputes about agricultural loans are comparatively very rare, and it is evident that the Ryots will rather stand a good deal of extra squeezing by the Marwarree lender, than apparently break faith with him by going to law. There are however, of course, occasional breaches of faith, and undoubtedly instances of extortion, also, which cannot be endured. Were a Company to make advances, it would do so judiciously, and under proper agreements; nor need the interest be higher than absolutely to protect the Company from loss. It would look to its profits upon the produce obtained, rather than to interest upon loans.

Another branch of employment of capital with profit, would be the direct importation of English fabrics for the supply of retail dealers of the district. Indeed retail sales might be established if possible. At present the Presidency is the only place in which cloths, cotton, and woollen can be obtained. But the large warehouses of a Company might always be stocked for the supply of the country at large, with advantage to itself and corresponding advantage to the people; and as cloths locally used and prepared could be obtained in the country and sent home for imitation, the exact quality, colour, and form could be imitated. I conceive that this would become a large and profitable branch of its business.

The main agency should be at Oomrawutte. I hear no complaints about its climate, but many of that of Akôla; and I know personally that Oomrawutte is pleasant for the greater part of the year. It is here that screwing-presses should be established; machinery for making "gunny" for bags, and cordage for the bales, when pressed. The railway will be open, it is said, in another twelve months, or at most eighteen months more; and by that time the Company's buildings, warehouses, screw-presses, and the

like plant, could be prepared; and those connections established between respectable farmers and local dealers, which would be indispensable. If it be desired to purchase land on the terms of the new Act, the tract on the right bank of the Wurdah could be examined and reported upon; as also waste lands near the River Poornah in the centre of the valley, eastward of Toogaom, in the Pergunna of that name; as also in other Talooks and Pergunnas adjacent to Oomrawutte. Much of the land has already been taken up and cleared; but some may still remain. The whole is of the finest quality. In short, an active agent, acting in concert with the Deputy Commissioners of the Berar Provinces, could, I have no doubt, secure waste lands wherever they were obtainable; and, whether cultivated directly by the Company, or rented for *produce*, to native farmers, they would be equally advantageous; but this much is certain, that waste lands are fast disappearing, that none are reserved, and that the best obtainable are always selected by the people: the sooner, therefore, if possession of land be an object, that selection is made, the better.

Oomrawutte will not only be advantageous for the goods' station on account of the railway, but because, should the navigation of the Godavery ever become an established fact, produce would be easily transmitted by that river, which could be comparatively quickly reached from that town. My own opinion is not favourable to the navigation of the Godavery; or that if it is ever effected, it will materially reduce the amount of transit by rail from Berar; it may, however, benefit those tracts lying south-east between Berar and the sea and the southern provinces of Nagpoor, and though at present, for an immense extent they are uninhabited wastes and forests, they may in their turn become populated countries.

Art. II.—*Does the Vaiśeshika Philosophy acknowledge a Deity, or not?* By J. Muir, Esq., D.C.L., LL.D.

In the paper on the Indian Materialists, lately published in the Journal of this Society (Vol. XIX, p. 313), I have expressed a doubt whether the Vaiśeshika philosophy is not atheistic. As the aphorisms of the Vaiśeshika, lately published in Calcutta, in the "Bibliotheca Indica,"[1] have been received in Europe since the paper in question was read, I have had an opportunity of testing the opinion then put forward by a reference to the primary authority for the tenets of this system; and, although I do not pretend to have studied the essential principles of this school of philosophy so as to be able to assert whether its theory of the universe is founded on theism or on atheism, I find some aphorisms which, in opposition to the Mīmānsakas, assert—1st, that the Vedas are the product of an intelligent mind; and 2ndly (if the interpretation of the commentator is to be received), that they have been uttered by God.

Assuming that these aphorisms are genuine, and that they have been correctly interpreted, it will result that the Vaiśeshika system is not atheistic, or, at least, that whatever the author's theory of creation may have been, he was unwilling to deny the existence of a supreme intelligence and his agency in reference to the revelation of the Veda.

Of the aphorisms which I am about to quote, the first has been translated by Dr. Ballantyne, and it, as well as the others, is briefly commented upon by Professor Banerjea in his "Dialogues on Hindu Philosophy," p. 474 f., and Pref. p. ix. note.

Aphorism i., 1, 3.—"The authority of the Vedic record arises from its being uttered by him."

In the preceding aphorism, righteousness had been defined as that through which happiness and future perfection are attained. The commentator then proceeds thus:—

[1] Only a small portion of these aphorisms had been previously published, with a translation, by Dr. Ballantyne.

i., 1, 3.—"But may it not be objected here that it is the Veda which proves that righteousness, in the form of abstinence from action, is, by means of the knowledge of absolute truth, the cause of future perfection; but that we dispute the authority of the Veda because it is chargeable with the faults of falsehood, contradiction, and tautology[1] And further, there is nothing to prove the authority of the Veda, for its eternity is disputed, its eternal faultlessness is doubted, and if it have a personal author, the fact of this person being a competent utterer is doubted; since there is a risk of error, inadvertence, uncertainty, and want of skill attaching to him. Thus there is neither any such thing as future perfection, nor is either a knowledge of absolute truth, or righteousness, the instrument thereof. Thus everything is perplexed."

In answer to all this the author of the aphorism says:—

i., 1, 3.—"The authority of the Vedic record arises from its being uttered by him."

"Here," says the commentator, "the word *tad* (His) refers to Iśvara (God); as, though no mention of Him has yet been introduced, He is proved by common notoriety to be meant; just as in the aphorism of Gautama:—'Its want of authority is shown by the faults of falsehood, contradiction, and tautology,' the Veda, though not previously introduced, is intended by the word *tad*."[2]

"And so [the meaning of the aphorism is that] the authority of the sacred record, *i.e.*, the Veda, is proved by its being spoken by Him, composed by Him, by Iśvara. Or, *tad* (its)[2] may denote *dharma* (duty) which immediately precedes; and then [the sense will be that] the authority of the sacred record, *i.e.*, the Veda, arises from its declaring, *i.e.*, establishing, duty, for the text which establishes any authoritative matter must be itself an authority. The proof of Iśvara and his competence will be hereafter stated." The commentator then goes on to answer the charges of falsehood, contradiction, and tautology alleged against the Veda.

The next aphorism which I shall quote (vi., 1, 1) is thus introduced by the commentator:—

"An examination of righteousness and unrighteousness, which are the original causes of the world,[3] forms the subject of the

[1] Here the same illustrations are given as in the commentary on the Nyāya aphorisms, quoted in my Sanskrit Texts, vol. iii., pp. 78, ff.

[2] For the sake of those who do not read Sanskrit, it may be mentioned that *tad* being in the crude, or uninflected form, may denote any of the three genders, and may be rendered either "he," "she," or "it."

[3] This, I believe, means that the existence of the world in its present o

6th section. Now, righteousness and unrighteousness are to be constituted by virtue of such injunctions as these: 'The man who desires paradise should sacrifice,' 'Let no one eat tobacco,' &c., provided these injunctions and prohibitions be authoritative. And this authoritativeness depends upon the fact of the utterer [of these injunctions or prohibitions] possessing the quality of understanding the correct meaning of sentences, for the supposition of inherent authoritativeness is untenable. The author, therefore, first of all enters upon the proof of that quality which gives rise to the authoritativeness of the Veda.

"Aphorism vi., 1, 1.—'There is in the Veda a construction of sentences which is produced (*lit.* preceded) by intelligence.'

"The 'construction of sentences,' the composition of sentences, is 'produced by intelligence,' *i.e.*, by a knowledge of the correct meaning of sentences on the part of the utterer [of them]; [and this is proved] by the fact of these sentences possessing an arrangement like the arrangement of such sentences as 'There are five fruits on the river side,' composed by such persons as ourselves. 'In the Veda,' *i.e.*, in the collection of sentences (so called). Here the construction of the sentences composing the collection is the proposition which is asserted. Nor is the contrary (*i.e.*, the unauthoritativeness of the Veda) proved by its being a [limited] intelligence, such as ours, which produced these sentences. [Because it was *not* a limited intelligence which produced them.] For it is not an object of apprehension to the understandings of persons like ourselves that such injunctions as, 'He who desires paradise should sacrifice,' are the instruments of obtaining what we desire, or that the desired results will follow. Hence in the case of the Veda the agency of a self-dependent person is established (since these matters could be known by such a person alone).[1] And since the meaning of the Veda is not the subject of knowledge produced by any proof distinct from the proof [arising] from words and their dependant [ideas]—*Vedicity*, or the characteristic nature of the Veda consists in its being composed of words which possess an authority

developed form, is necessary in order to furnish the means of rewarding righteousness and punishing unrighteousness. But, as I believe the Indian philosophers regard the eternal soul as incapable of action, and thus of righteousness, or unrighteousness, prior to its becoming embodied, it is difficult to see how righteousness and unrighteousness, which are themselves effects dependent on the existence of the world, can be its causes. Perhaps the explanation will be, that all things are considered to revolve in an eternal cycle.

[1] Here the writer *assumes* that the Vedic ceremonies will be followed by the desired results in another world, as he is not arguing with those who would deny this.

springing from a knowledge of the meaning of sentences composed of words."

I will introduce the next aphorism (x., 2, 9,) which I propose to cite (and which is a repetition of Aphorism i., 1, 3,) by adducing some remarks of the commentator on the one which immediately precedes it, viz., x., 2, 8:—

"Now all this will be so, provided the Veda is authoritative: but this condition is difficult to attain; for you do not hold, like the Mīmānsakas, that the authority of the Veda arises from its eternal faultlessness; since you admit that it has a personal author, and error, inadvertence, and a desire to deceive are incident to such a person. It is with a view to this objection that the writer says in his aphorism, 'In the absence of what is seen,' *i. e.*, in the absence of those personal faults which are seen in other persons like ourselves,[1] such as error, inadvertence, and the desire to deceive; for the Supreme Person who is inferred from the creation of the world, or the authorship of the Veda, can only exist in a state of freedom from fault; and, consequently, neither want of meaning, nor contradiction of meaning, nor uselessness of meaning, can be predicated of his words. Incorrectnesses in words are possible when they are occasioned by error, inadvertence, or unskilfulness, arising from some defect of the elements, the senses, or the mind. But none of these things is possible in the word of Iśvara (the Lord). And this has been expressed in the following verse: 'A speaker may utter falsehood, from being possessed by affection, ignorance, and the like; but these [defects] do not exist in God; how then can he speak what is otherwise [than true]?'

"But may not the fact that the Veda is composed by this God be disputed? In consequence of this, the author says (in the next aphorism):—

x., 2. 9. 'The authority of the Vedic record arises from its being uttered by Him.'

"Thus at the end of his treatise [the writer lays it down that] the authority of the Veda is derived from its being His word, viz., from its being spoken, *i. e.*, composed by Him, *i. e.*, by Iśvara. As thus: The Vedas, now, are derived from a person, because they are formed of sentences. This has been proved. And persons like ourselves cannot be conceived as the utterers of these Vedas,

[1] A different interpretation is given by the commentator to this phrase *dṛishṭābhāve*, in an earlier aphorism in which it occurs, viz, vi., 2, 1. He there understands it to mean that *where there is no visible motive* for a prescribed action, an *invisible* one must be presumed.

which are distinguished by having thousands of Śākhās (recensions), because their purport is such as to lie beyond the reach of the senses; and persons like us have no perception of any thing beyond the reach of the senses. Further, the Vedas [are not only derived from a personal author, but they] have been uttered by a *competent* person (*āpta*), because they have been embraced by great men. Whatever has not been uttered by a competent person is not embraced by great men: but this (book) is embraced by great men: therefore it has been uttered by a competent person. Now, composition by a *self-dependent* person[1] is utterance by a *competent* person; and the reception (of the Veda) by great men is the observance of its contents by persons who are adherents of all the different philosophical schools: and (the infallibility of the Veda is defended by that which) has been already said, viz., that any occasional failure in the effects (of ceremonies prescribed in the Veda) is owing to some defect in the rite or in the performer, or in the instruments employed [and not to any fallibility in the Veda].

"If it be objected to this reasoning, that no author (of the Veda) is recollected, we rejoin, that this is not true, because it has been formerly proved that the author is remembered. And that it was composed by Him is proved by the simple fact of its being composed by a self-dependent person; and because it has been said that the self-dependence [or unassisted ability] of people like us in the composition of the Veda, consisting, as it does, of a thousand Śākhās, is inconceivable. And since authority (in a writing in general) springs from a quality, it necessarily follows that the authority of the Veda also springs from a quality. And here the quality in question must be declared to be the speaker's knowledge of the correct meaning of sentences. And thus (we have shewn that) there is such an utterer of the Veda, who possesses an intuitive knowledge of paradise, and of the yet unseen consequences of actions, &c., and such an utterer is no other than Iśvara. Thus all is satisfactory."

The ultimate proofs, then, of the binding authority of the Veda are, according to the commentator, 1st, its extent and subject-matter and, 2ndly, its unanimous reception by great men, adherents of all the different orthodox systems. Of course these arguments have no validity except for those who see something supernatural in the Veda, and on the assumption that the great men who embraced it were infallible; and therefore as against the Bauddhas and other heretics who saw nothing miraculous in the

[1] See the note at the end of this paper.

Vedas, and consequently regarded all their adherents as in error, they were utterly worthless. But it does not appear to be the object of the commentator, and perhaps not of the author of the Aphorisms, to state the ultimate reasons on which the authority of the Vedas would have to be vindicated against heretics, but merely to explain the proper grounds on which the orthodox schools who already acknowledged that authority ought to regard it as resting; *i.e.*, not as the Mīmānsakas held, on their eternal faultlessness, but on their being uttered by an intelligent and omniscient author; whose authorship, again, was proved by the contents of the Vedas having reference to unseen and future matters of which only an omniscient Being could have any knowledge; while the fact of these revelations in regard to unseen things having actually proceeded from such a Being, and being therefore true, was guaranteed by the unanimous authority of the wisest men among the faithful.

It may be said that the proof of the theistic character of the Vaiśeshika system is little, if at all, strengthened by the texts which I have adduced from the aphorisms, as the concluding text (x., 2, 9) is a mere repetition of Aphorism i., 1, 3, which had been previously discussed, and the sense of which is disputed; while the other passage (vi., 1, 1) merely declares that the Veda is the work of an intelligent author, but does not assert that that author is God.[1] But I think that the Aphorism vi., 1, 1, throws some light upon the object and sense of the other two, as it shows that the question regarding the authorship of the Veda was one which occupied the attention of the composer of the aphorisms. I may further observe that the alternative explanation which the commentator gives of the Aphorism i., 1, 3, viz., that the authority of the Veda arises from its being declarative of duty, is a much less probable one than the other, that its authority is derived from its being the utterance of God; for it does not clearly appear how the *subject* of a book can establish its authority; and, in fact, the commentator, when he states this interpretation, is obliged, in order to give it the least appearance of plausibility, to assume the authoritative character of the precepts in the Veda, and from this assumption to infer the authority of the book which delivers them. I may also observe that Jayanārāyaṇa Tarkapanchānana the author of the "Gloss on Śankara Miśra's Commentary," takes no

[1] The purport of this and the following aphorisms is not correctly rendered by Professor Banerjea (p. 474), in the words, "The composition of sentences and the rules of alms-giving contained in the Vedas *are according to reason.*" The true sense has been given above.

notice of the alternative interpretation alluded to; and that in his comment on the same aphorism, when it is repeated at the close of the work at x., 2, 9, Śankara Miśra himself does not put it forward a second time.

Besides the aphorisms already adduced, there are two others, ii., 1, 18, and 19 (p. 93 ff), which are regarded by the commentators as establishing the existence of a Deity. These aphorisms are thus introduced by Śankara Miśra:—

"Having thus concluded the section on the wind, he now, in answer to the question, whether the names given to the wind in the Veda (see the comment on the 17th aphorism) do not resemble the names *dittha*, *davittha*, senselessly jabbered by the insane, proceeds to prove that the Veda has been composed by an omniscient person; and desiring to commence an introductory section on the Deity, he says, Aphorism 18, 'But name and work are signs of beings superior to ourselves.'

"*Saññā* means 'name;' 'work' means 'an effect,' such as the earth, &c. Both of these things are signs of the existence of beings superior to ourselves, viz., God, and the great rishis. He explains how this is, in Aphorism 19, 'Because name and work proceed from perception (or intuition) [of the thing named, or of the substance of the thing made].'

"Here the sense arising from the copulative combination (*samāhāra-dvandva*) of the two words 'name' and 'work' is akin to that of unity, and indicates that there is no distinction between the imposer of the name and the maker of the world. As thus: He to whom heaven and the unseen future are apparent, is alone able to give the names of 'heaven,' and 'unseen future;' just as a father, &c., imposes the names of Chaitra and Maitra on the visible persons of his sons Chaitra and Maitra. In the same way the imposition of the names 'jar' and 'cloth' depends upon the sign instituted by the Deity. Whatever word is applied by Him to any object as its sign, is correctly so applied. Thus an intimation (or proposition) like this: 'every plant which has been touched by the tip of a weasel's[1] grinder destroys the poison of a serpent,' is a sign which leads us to infer beings superior to such as ourselves. And so also the name of Maitra, &c., given by a father to his son is also certainly imposed by God, through the instrumentality of such precepts as this, viz.: 'Let a father give a name on the twelfth day.' And thus it is proved that a name is a sign [denoting the existence] of God. In the same way work also, or effect, is a

[1] Weasels are known to be great destroyers of serpents.

sign of the Deity. As thus: The earth, &c., has a maker, since it is an effect (*lit.* a thing to be made), like a jar, &c."

The commentator proceeds to enter on a very abstruse discussion, in which I shall not attempt to follow him.

Note to page 26.

It is not probable that, in these words, the commentator intends to represent the term *āpta*, "a competent person," as commensurate, and convertible, with *sva-tantra purusha*, "a self-dependent person." It is more likely that he merely means to say that the "self-dependent person" must, *à fortiori*, be "competent." If this be a correct interpretation of his meaning, it will remain doubtful whether the author of the Nyāya aphorisms, who bases the authority of the Vedas on that of the "competent person" by whom they were uttered, intended by that term to denote the Deity. For the Tarka Sangraha (Sanskrit Texts, iii., 209), which distinguishes sentences into "Vedic" and "Secular," and ascribes the former to the Deity as their author, considers one class of "secular" sentences also to be authoritative, because they are uttered by a "competent person" (*āpta*). Vātsāyana also, a commentator, cited by Professor Banerjea, in his dialogues on Hindu philosophy (and after him, in my Sanskrit Texts, part iii., p. 210), defines a "competent person" (*āpta*) as one who has an intuitive perception of duty—(*sāxāt-kṛita-dharmā*,—a word which is employed in the Nirukta i., 20, as an epithet of the rishis),—an instructor possessed by the desire of communicating some subject-matter just as it was *seen* by him." According to this writer, "the intuitive perception of the subject-matter constitutes 'competence' (*āptí*), and a person who has this 'competence,' is 'competent.'"[1]

As it is a matter of some interest to know what is the nature of inspiration, or supernatural knowledge, as conceived by the Vaiśeshikas, I shall quote some passages bearing on this subject from the aphorisms, or from their expounder, Śankara Miśra. In his remarks on Aphorism viii., 1, 2 (p. 357), the commentator states that knowledge (*jñāna*) is of two kinds, true (*vidyā*) and false (*avidyā*); and that the former (*vidyā*) is of two descriptions, arising from perception (*pratyaxa*), inference (*laingika*), recollection (*smṛiti*), and inspiration (*ārsha*, the knowledge "peculiar to rishis"). Perception or intuition, again, is of different kinds or degrees (Aphorisms ix., 1, 11—15, pp. 385 ff). Aphorism xi., 1, 11 (p. 386), is as follows:—

[1] The Kusumāñjali argues against the supposition of a created person being the author of the Veda. Sanskrit Texts, iii., p. 213.

"From a particular conjunction of both the soul and the mind[1] with the soul, arises the perception (or intuition) of soul." On this the commentator remarks:—"There are two kinds of *yogins* (intent, or contemplative, persons), (1) those whose inner sense is fixed (*samāhitāntaḥkaraṇāḥ*), who are called (*yuktāḥ*) united (*i.e.*, with the object of contemplation), and (2) those whose inner sense is not fixed, and who are called 'disunited' (*viyuktāḥ*). Of these the first class, who are called 'united,' fix their minds with reverence on the thing which is to be the object of intuition, and seek to contemplate it. In this way, in their souls knowledge arises regarding their own souls, and the souls of others. 'Intuition of soul;' that is, a knowledge in which soul is the perceptible object of intuition. Thus, although persons like our ourselves have sometimes a knowledge of soul, yet from this knowledge being affected by ignorance, it has been said to be like what is unreal. 'From a particular conjunction of the soul and the mind;' that is, from the grace arising from the righteousness produced by *yoga*, which is a particular conjunction of the soul and the mind." See also Aphorism 15, p. 390.

At the conclusion of his remarks (in p. 408) on the third sort of true knowledge (referred to in p. 357), viz., recollection, the commentator remarks that the author of the aphorisms does not make any separate mention of the fourth kind of knowledge, viz. inspiration. "Inspired (*ārsha*) knowledge," he says, "is not separately defined by the author of the aphorisms, but is included in the intuition of *yogins*.[2] But the following statement has been made (in reference to it) in the section on the categories: 'Inspired (*ārsha*) knowledge is that which, owing to a conjunction of the soul and the mind, independent of inference, &c., and owing to a particular species of virtue, illuminates those rishis who have composed the record of the Vedas (*āmnāya-vidhātṛīṇām*), in reference to such matters, whether past, future, or present, as are beyond the reach of the senses, or in reference to matters of duty, &c., recorded in books,' &c. And this sort of knowledge is also sometimes obtained by ordinary persons, as when a girl says, 'my heart tells me that my brother will go to-morrow.'" See also Aphorism ix., 2, 13, pp. 414, 415.

[1] The "mind" (*manas*) is regarded by the Indian philosophers as distinct from the soul, and as being merely an internal organ.

[2] It had been already noticed by Professor Max Müller in the "Journal of the German Oriental Society," vii., p. 311, that "the Vaiseshikas, like Kapila, include the intuition of enlightened rishis under the head of *pratyaxa*, and thus separate it decidedly from *aitihya* 'tradition.'" He also quotes the commentator's remark about the girl, which he thinks is not "without a certain irony."

Art. III.—*Legends chiefly from the Śatapatha Brāhmana.*

By J. Muir, Esq., D.C L., LL.D.

The Brāhmanas may be generally described as occupying an intermediate position, both as regards chronology, character, language, and mythology, between the Vedic hymns, and the Indian epic poems and Purānas. They are liturgical works, connected with the different Sanhitās, or collections of hymns, and having it for their object to explain the application of those hymns to the different parts of the Brahmanical ritual, as practised at the period when they were compiled.[1] In these works we encounter a great many legends of greater or less extent, which are introduced with the view of showing the occasion on which some particular hymn was first uttered, or of accounting for the origin, and enforcing the efficacy, of some particular ceremony, or for some other such purpose. Many of these stories have their germ in some brief notice or allusion in the hymns of the Rig Veda, while they occur in a greatly developed form in the epic poems and Purānas. The shape in which these legends occur in the Brāhmanas is thus an intermediate one between that in which they appear in the hymns, and that which they subsequently assume in mythological works of a later date. Of this description is the story of Śunahśepha in the Aitareya Brāhmana, which appeared about the same time in the 1st and 2nd vols. of Weber's "Indische Studien," in the German translation of Professor R. Roth, and in the Journal of this Society, vol. xiii., pp. 96 ff., translated into English by the late Professor Wilson, and which has subsequently been given by Professor Max Müller, in his "History of Ancient Sanskrit Literature," pp. 408 ff. In this story the author of the Brāhmana quotes various hymns from the first Mandala of the Rig Veda, which he considers to have been uttered by Śunahśepha, at the time when he was in danger of being immolated. The legend was, at a later period, introduced into the Rāmāyana, Book i., sections 61, 62.

[1] For a detailed account of these works, Professor Max Müller's well known "History of Ancient Sanskrit Literature" may be consulted.

Two interesting legends, from the Śatapatha Brāhmana, have been translated by Professor Weber, in the first volume of his "Indische Studien," as illustrative of the immigration of the Aryas into India from the north, and of their subsequent diffusion to the eastward.[1] The first of these two passages contains the legend of the Deluge (at the close of which the ship carrying Manu, the progenitor of the Indian Aryas, was stranded on one of the peaks of the Himālaya), in the oldest form in which it occurs in any Indian work. A later version of the legend occurs in the Mahābhārata,[2] and a third of a still more modern complexion, is to be found in the Bhāgavata Purāna.

I shall now proceed to adduce, from the Śatapatha Brāhmana, and other similar works, some other stories relating to Vishnu, and some of the other deities.

It has been noticed by Professor Wilson, in the Introduction to his translation of the Rig Veda, vol. i., p. xxxiv, that Vishnu, as represented to us in the hymns of that Veda, is a deity of quite a different character from the god of the same name whom we meet in the later Hindu mythology. As Professor Wilson's remarks are readily accessible, I shall not introduce here any description of the Vedic Vishnu. When we descend from the hymns to the Brāhmanas, although we discover perpetual allusions to the earliest conception of Vishnu, as traversing the sky in three strides, yet he no longer appears exclusively under that character, but becomes invested with some new attributes, and forms the subject of various new legends, which are quite foreign to the hymns;—at the same time that he is still very different from the deity of the same name, who is described in the Purānas.

The following are the principal legends regarding Vishnu which I have noticed in the Śatapatha Brāhmana.

The first, from chapter i, 2, 5, 1 ff, in which the god is represented as a dwarf, and as having, under the form of sacrifice, conquered the whole earth, appears, when combined with the conception contained in the hymns, of his having traversed the world in three strides, to have formed the germ of the story of the dwarf incarnation. The style, it will be remarked, is characterized by a naïve simplicity.

[1] One of these stories has been subsequently quoted by Professor Max Müller in his "Anc. Ind. Lit." p. 425 (along with some others from the other Brāhmanas), and both have appeared in the 2nd vol. of my Sanskrit Texts, pp. 325 ff., and 420 ff.

[2] Vana-parva, vv. 12746—12804.

"The gods and Asuras, who were both sprung from Prajāpati, strove together. Then the gods were, as it were, worsted, and the Asuras thought, 'this world is now certainly ours.' 2. Then they spake, 'Come let us divide this earth, and having divided it, let us subsist thereon.' They accordingly went on dividing it with ox-hides from west to east. 3. The gods heard of it, [and] said, 'The Asuras are dividing this earth; come, we shall go to the spot where they are dividing it. Who shall we become (*i.e.*, what shall become of us), if we do not share in it?' Placing at their head Vishṇu, the sacrifice, they proceeded [thither], 4. and said, 'put us in possession of this earth; let us also have a share in it.' The Asuras, grudging as it were, answered, "We give you as much as this Vishṇu can lie upon.'[1] 5. Now, Vishṇu was a dwarf. The gods did not reject that offer; [but said among themselves], 'They have given us much [these Asuras], who have given us what is co-extensive with sacrifice.' Then having placed Vishṇu to the east, they surrounded him with metres; [saying], on the south side, 'I surround thee with the Gāyatrī metre;' on the west, 'I surround thee with the Trishṭubh metre;' on the north, 'I surround thee with the Jagatī metre.' 7. Having thus surrounded him with metres, they placed Agni (fire) on the east, and thus they went on worshipping and toiling. By this they acquired the whole of this earth; and since by this they acquired (*samavindanta*) it all, therefore [the place of sacrifice] is called *vedi* (from the root *vid*, 'to acquire'). Hence men say, 'as great as is the altar, so great is the earth;' for by it (the altar) they acquired the whole of this [earth]. Thus he who so understands this, conquers all this [earth] from rivals, expels from it rivals. 8. Then this Vishṇu, being wearied, surrounded by metres, with Agni to the east, did not advance; but hid himself among the roots of plants. 9. The gods then exclaimed, 'What has become of Vishṇu? what has become of the sacrifice?' They said, 'Surrounded by metres, with Agni to the east, he does not advance; search for him here.' So digging, as it were, they searched for, and found him at a depth of three fingers; therefore let the altar [have a trench] three fingers deep.

[1] Compare with this legend the similar one quoted by Sāyana in his note on R. V. vi., 69, 8, from the Aitareya Brāhmaṇa, 6, 15:—"Indra and Vishṇu fought with the Asuras. Having conquered them, they said, 'let us divide [the world].' The Asuras said, 'be it so.' Indra said, 'As much as this Vishṇu strides over in three strides, so much is ours; the rest is yours.' He strode over these worlds, then the Vedas, then speech."

Therefore, also, *Pāñchi*[1] made an altar of this description for the soma sacrifice. 10. But let no one do so," etc.

The next legend from the same work relates how Vishṇu became pre-eminent among the gods, and how he lost his head. Here also he is identified with sacrifice.

Śatapatha Br. xiv. i. 1, 1, ff.: "The gods, Agni, Indra, Soma, Vishṇu the Sacrifice, and all the [other] deities, excepting the Aśvins, were present at a sacrifice. 2. Kuruxetra was the place of their divine worship. Hence, men say that Kuruxetra is the country where the gods sacrifice. Consequently, to whatever part of Kuruxetra a man goes, he looks upon it as a place for divine worship, since it was the spot where the gods worshipped. 3. They were [there. They said], 'May we attain prosperity, become famous, and eat food.' And in the very same way these [men] attend a sacrifice [saying], 'May we attain prosperity, become famous, and eat food.' 4. Then [the gods] said, 'Whosoever among us, through exertion, austerity, faith, sacrifice, and oblations, first comprehends the issue of the sacrifice, let him be the most eminent of us: this [renown shall be] common to us all.' [To this they consented, saying], 'Be it so.' 5. Vishṇu first attained that [proposed object]. He became the most eminent of the gods: wherefore men say, 'Vishṇu is the most eminent of the gods.' 6. He who is this Vishṇu is sacrifice; he who [is] this sacrifice is the Aditya.[2] Vishṇu could not support this fame. And the same is the case now, that every one cannot support fame. 7. Taking his bow and three arrows, he departed. He stood, resting his head on the end of his [bended] bow. Being unable to overcome him, the gods sat down all round him. 8. Then the ants said to them (now the ants were the same as *upadīkas*), 'What will you give to him who gnaws the bowstring?' [The gods replied], 'We will give him the enjoyment of food, and he shall find waters even in the desert; so shall we give him every enjoyment of food.' 9. [The ants, then], approaching, gnawed his bowstring. When that was divided, the ends of the bow, starting asunder, cut off the head of Vishṇu. 10. It fell, making a sound

[1] On this the commentator remarks:—"Pānchi thought that the altar for the soma sacrifice also should have a trench three fingers deep." Pānchi is again mentioned in the Śatapatha Brāhmaṇa 2, 1, 4, 27 (p. 143), along with Āsuri and Mādhuki, where the commentator speaks of them as three munis (Asuri-prabhṛitayas trayo munayah). See Weber's Ind. Stud. i. 192, 434.

[2] It seems as if there were a play of words here, the word *yaśah*, "fame," having reference to the words *sa yah sa* Vishṇuh, etc., *sa yah sa* yajñah, etc. "He *who* [is] *this* Vishṇu," etc. "He *who* [is] *this* sacrifice," etc.

(*ghṛiṇ*). That having fallen, became that Aditya. Then the rest of him became extended towards the east. Since the head fell with the sound of *ghrin*, hence *gharma*, [the 'sacrificial kettle,' received its name]; and since he became extended, *(prāvṛijyata)* the *pravargya* [received its appellation]. 11. The gods then said, 'A great hero (*mahān vīrah*) of ours has fallen.' Hence arose the name of *mahāvīra* (a sacrificial vessel).[1] They wiped (*sammamṛijuh*) with their hands the fluid (blood) which flowed from him. Hence arose the name of *samrāt*. 12. The gods touched (?) him (Vishṇu), as men wishing to know property (?) do. Indra first reached him. He came into contact with him limb by limb. He embraced him. Having embraced him, he became this fame, which Indra is. He who so knows this becomes fame. 13. That Vishṇu was indeed sacrifice (*makha*). Hence Indra became the possessor of sacrifice (*makhavān*). He is *Makhavān;* they call him *Maghavān* transcendentally: for the gods love what is transcendental (*lit.* beyond the reach of the senses). 14. They (the gods) gave food to those ants. All food is water; for with water men, as it were, moisten the food which they eat: as the common saying is. 15. Then they divided into three portions this Vishṇu, the sacrifice. With that headless sacrifice (see above), the gods went on worshipping and toiling."

I am indebted to Professor Weber for the next two passages, the first from the Taittirīya Araṇyaka, and the second from the Panchavimśa Brāhmaṇa, which both relate the same legend which has just been given from the Śatapatha Brāhmaṇa.

Taittirīya Aranyaka, v. i. 1 ff.—"The gods, desirous of fame, were attending a sacrifice complete in every respect. They said 'whatever fame first comes to us, that shall be common to us all.' Kuruxetra was their altar. Khaṇḍava was its southern, Tūrghna its northern, and Parīnah its hinder section. The Marus were the earth dug from it. 2. Fame came to the Sacrifice derived from Vishṇu [*Makha Vaishṇava*] among their number. This fame he eagerly desired; with it he departed. The gods followed him, seeking to obtain [this] fame. From the left [hand] of him while thus followed, a bow was produced, and from his right hand arrows. Hence a bow and arrows have a holy origin, for they are sprung from sacrifice. 3. Though many, they could not overcome him, though he was only one. Therefore many men without bows and

[1] A long account is given of the *gharma, pravargya,* and *mahavīra* in Kātyāyāna's Srauta Sūtras, xxvi.

arrows cannot overcome one hero who has a bow and arrows. He smiled, 'Though they are many, they have not overcome me who am only one.' Virile strength issued from him as he continued to smile. This the gods put upon the plants. They became *śyāmāka* grain. For they are smilers (*smayākāh*). 4. Hence this grain derives its name. Wherefore a person who has been consecrated should smile with reserve, that he may retain his virility. He stood leaning on his bow. The ants said [to the gods], 'let us choose a boon; and after that we shall subdue [or kill him]. Wherever we dig, let us open up water.' Hence wherever ants dig, they open up water. 5. For this was the boon which they chose. They gnawed his (Vishṇu's) bowstring. His bow, starting asunder, hurled his head upwards. It travelled through heaven and earth. From its so travelling (*prāvarttata*), the *pravargya* derives its name. From its falling with the sound of *ghrām*, *gharma* obtained its name. Virile energy (or seed, *vīryam*) fell from the mighty one (*mahatah*): hence the *mahāvīra* got its name. 6. From their taking a portion (*samabharan*) of it (the bow-string?) the *samrāt* obtains its appellation. The gods divided him, when prostrate, into three parts; Agni [took] the morning oblation; Indra the midday oblation; and the Viśvedevas the third oblation. Sacrificing with this headless sacrifice, they (the gods) neither obtained blessings, nor conquered heaven. 7. The gods said to the Aśvins, 'Ye two are physicians, replace this head of the sacrifice.' They said 'Let us ask a boon, let our *graha* (libation of Soma) be received here also. [The gods accordingly] received this [libation] to the Aśvins on their behalf. [The Aśvins] replaced this head of the sacrifice, which is the *pravargya*. Sacrificing with this sacrifice with a head, they obtained blessings, they conquered heaven. When one spreads out the *pravargya*, then he replaces the head of the sacrifice. Sacrificing with this sacrifice with a head, a man obtains blessings, and conquers heaven. Hence this *pravargya* is principally concerned with oblations to the Aśvins."

Panchaviṁśa Brāhmaṇa, vii., 5, 6.—"Desirous of fame, the gods Agni, Indra, Vāyu, and Makha (Sacrifice) were attending a sacrifice. They said, 'whatever fame comes to us, that shall be common to us.' Fame came to Makha among their number. Taking it, he departed. The others wished to take their share in it. They strove with him. He stood leaning on his bow. The end of his bow, springing upwards, cut off his head. He became the *pravargya*. Makha is sacrifice. When men spread out the *pravargya*, they replace the head of Makha."

It is not my object to cite here the later legends about Vishṇu, the principal of which are well known, and easily accessible. I shall merely indicate two of the most important passages which give an account of the Dwarf incarnation. These are in the Rāmāyana, i., 31, 2 ff., Schlegel's ed.; i., 32, 2 ff., Gorresio's ed.; and the Bhāgavata Purāna, Book viii., sections 15—21.

I shall now adduce some legends from the Śatapatha Brāhymaṇa about the creation, the primeval waters, the mundane egg, &c., which will readily be recognized as the originals from which the representations of the same subjects given in Menu's Institutes and in the Purānas have been derived:

Śatapatha Brāhmaṇa, vi. 1, 1, 1 (pp. 499 of Weber's edition): "In the beginning this [universe] was indeed non-existent. But men say, 'what was that non-existent?' The rishis say, that in the beginning there was non-existence. Who are these rishis? The rishis are breaths. Inasmuch as before all this [universe], they desiring this [universe], strove (? *arishan*), with toil and austerity, therefore they are called *rishis*. 2. This breath which is in the midst is Indra. He by his might kindled these breaths in the midst: inasmuch as he kindled them, he is the kindler (*Indha*). They call Indha Indra transcendentally; for the gods love that which is transcendental. They being kindled, created seven separate men (*purusha*). 3. They said, 'being thus, we shall not be able to generate these seven men; let us make one man.' So speaking, they made these seven men one man (*purusha*). Into the part above the navel, they compressed two of them, and two others into the part below the navel; [one] man [formed one] side; [another] man [another] side; and one formed the base. 5. This [one] man became Prajāpati. The man who became Prajāpati is the same as this Agni who is kindled on the altar. 6. He verily is composed of seven men (*purusha*): for this man is composed of seven men, since four [make] the soul, and three the sides and extremity (*lit.*, tail). For the soul of this man [makes] four, and the sides and extremity three. Now, inasmuch as he makes the soul [which is equal to four] superior by one man, the soul, in consequence of this [excess of] force, controls the sides and extremity [which are only equal to three]. 8. This man (*purusha*) Prajāpati desired, 'may I become more, may I be reproduced.' He toiled, he performed austerity. Having toiled and performed austerity, he first created the Veda (*brahma*), the triple science. It became to him a foundation; hence men say, 'the Veda (*brahma*) is the foundation of all this.' Wherefore having

studied [the Veda] a man has a foundation (?), for this is his foundation, namely the Veda. Resting on this foundation, he performed austerity. 9. He created the waters from the world [in the form of] speech.[1] Speech belonged to him. It was created. It obtained (pervaded) all this. Because it *obtained* (*āpnot*) all this which exists, it (speech) was called waters (*āpah*); and because it *covered* (*avriṇot*), it was called *vāh* (another name of water). 10. He desired, 'May I be reproduced from these waters.' So saying, with this triple science he entered the waters. Thence an egg arose. He pondered on it (?). He said, 'let there be,' 'let there be,' again, 'let there be.' From it the Veda was first created, the triple science. Hence men say, 'the Veda is the first-born of this whole [creation]. Further, [as] the Veda was first created from that Man, therefore it was created his mouth. Hence they say of a learned man that he is like Agni; for the Veda is Agni's mouth."

The same idea about Prajāpati being composed of seven men, occurs again in the Śatapatha Brāhmaṇa, x., 2, 2, 1 (p. 767).—"These seven men whom they made one man (*purusha*) became Prajāpati. He created offspring. Having created offspring, he mounted upwards; he went to this world where he shines upon this. There was then no other object of worship: the gods began to worship him with sacrifices. Hence it has been said by the rishi (Rig Veda, x., 90, 16), 'the gods worshipped the sacrifice with sacrifice.'"

II. In the preceding legend, the gods are represented as the creators of Prajāpati, who in his turn is stated to have generated the waters, and the mundane egg. In the following story, the order of production is different. The waters generate the egg, and the egg brings forth Prajāpati, who creates the worlds and the gods.

Śatapatha Brāhmaṇa, xi., 1, 6, 1 ff. (pp. 831 ff.)—"In the beginning this universe was waters, nothing but water.[2] The

[1] This is illustrated by another passage in the Śatapatha Brāhmaṇa, vii., 5, 2, 21 (617), which says: *vāg vā ajo vācho vai prajā Viśvakarmā jajāna* | "Speech is the mover [or, the unborn]. It was from speech that Viśvakarman produced creatures." And in the Bṛihad Araṇyaka (p. 290 of Bibl. Ind.) it is said | *trayo lokā ete eva* | *vāg evāyaṁ loko mano 'ntarikṣa-lokah prāṇo 'sau lokah* | "It is they which are the three worlds. Speech is this world, mind is the aerial world, and breath is that world (the sky)."

[2] Śatapatha Brāhmaṇa, vi., 7, 1, 17.—*Tasyāpa eva pratishṭhā* | *apsu hi ime lokāh pratishṭhitāh* | "Waters are its support: for these worlds are based upon

waters desired, 'how can we be reproduced?' So saying, they toiled, they performed austerity. While they were performing austerity, a golden egg came into existence. Being produced, it then became a year. Wherefore this golden egg floated about for the period of a year. 2. From it in a year a man (*purusha*) came into existence, who was Prajāpati. Hence it is that a woman, or a cow, or a mare, brings forth in the space of a year, for in a year Prajāpati was born. He divided this golden egg. There was then no resting-place for him. He therefore floated about for the space of a year, occupying this golden egg.[1] 3. In a year he desired to speak. He uttered *bhūh*, which became this earth;[2] *bhuvah*, which became this firmament; and *svah*, which became that sky. Hence a child desires to speak in a year, because Prajāpati spoke in a year. 6. He was born with a life of a thousand years. He perceived the further end of his life, as [one] may perceive the opposite bank of a river. 7. Desiring offspring, he went on worshipping and toiling. He conceived progeny in himself; with his mouth he created the gods. These gods were created by attaining heaven. This is the godhead of the gods (*devāh*) that they were creating by attaining heaven (*divam*). To him while he was continuing to create, heaven, as it were, arose (?). This is the godhead of the gods, that to him as he was continuing to create, heaven, as it were, arose. . . . 14. These [following] gods were created from Prajāpati, *viz.*, Agni, Indra, Soma, and Parameshṭhin, son of Prajāpati. 18. Prajāpati said to his son Indra," etc.

In the next passage, Prajāpati is said to have taken the form of a tortoise:

Śatapatha Brāhmana, vii., 4, 3, 5 (p. 609.)—"Having assumed the form of a tortoise, Prajāpati created offspring. That which he created, he made (*akarot*); hence the word *kūrma*. Kaśyapa means tortoise; hence men say, 'all creatures are descendants of Kaśyapa.' This tortoise is the same as Aditya."

the waters." Śatapatha Brāhmaṇa, xiv., 8, 6, 1 (=Bṛihad Araṇyaka Upanishad, p. 974). — *Āpa evedam agre āsuh | tā āpah satyam asṛijanta satyam Brahma Brahma Prajāpatim Prajāpatir devān |* "In the beginning waters alone formed this universe. These waters created Truth, Truth created Brahma, Brahma created Prajāpati, and Prajāpati the gods."

[1] *Tasya Prajāpater āspadaṁ kimapi na babhūva sa cha nirādhāratvāt sthātum aśaknuvann idam eva bhinnam hiranmayāṇḍam punah samvatsaraparyantam bibhrad dhārayan tāsv evāpsu paryasravat |* "There was no resting place for Prajāpati; and he, being unable to stand, from the want of any support, occupying this divided golden egg for a year, floated about on these waters." Comm.

[2] Compare Śatapatha Brāhmaṇa, p. 141.

In the later mythology, as is well known, it is Vishṇu who assumes the form of a tortoise.

Thus in the chapter of the Bhāgavata Purāṇa descriptive of Vishṇu's incarnations it is said (i., 3, 16):—"In his eleventh incarnation, the Lord in the form of a tortoise supported on his back the churning-mountain, when the gods and Asuras were churning the ocean."

In its application of the Vājasaneyi Sanhitā, 37, 5, the Śatapatha Brāhmaṇa 14, 1, 2, 11 (p. 1025) makes the following allusion to the elevation of the earth by a boar:—"'She (the earth) was formerly so large,' &c.; for formerly this earth was only so large, of the size of a span. Emūsha, a boar,[1] raised her up."

I quote some further texts relative to Prajāpati.

In the following he is said to have in the beginning constituted the universe, and to have created Agni (see above, pp. 37, 39).

Śatapatha Brāhmaṇa, ii., 2, 4, 1 (p. 151).—"Prajāpati alone was all this [universe] in the beginning. He considered, 'how can I be reproduced?' He toiled, and performed austerity. He generated Agni from his mouth."

In the next passage, ii., 4, 4, 1 (p. 173), he is identified with Daxa:[2]—"Prajāpati formerly sacrificed with this sacrifice, being desirous of progeny, [and saying] 'may I abound in offspring and cattle, attain prosperity, become famous, and obtain food.' He was Daxa."

In Śatapatha Brāhmaṇa, vi., 8, 1, 14 (p. 565) Prajāpati is said to be the supporter of the universe (a function afterwards assigned to Vishṇu:—"Prajāpati is Bharata (the supporter), for he supports all this universe."[3]

Compare the first verse of the Muṇḍaka Upanishad, where Brahmā is called the preserver of the world (*bhuvanasya goptā*).

In the next passage, xiii., 2, 4, 1 (p. 977), Prajāpati is represented as desirous, not to create, but to conquer, the worlds:—"Prajāpati desired, 'may I conquer both worlds,' that of the gods, and that of men," &c.

In chapter xiii., 6, 6, 1 (p. 997) Purusha Nārāyaṇa is introduced:—"Purusha Nārāyaṇa desired, 'may I surpass all created things; may I alone become all this?' He beheld this form of sacrifice

[1] See R.V. viii., 66, 10.

[2] See R.V. x., 72, 4, 5.

[3] In R.V. i., 96, 3, the epithet *Bharata* is applied to Agni. The commentator there quotes another text, no doubt from a Brāhmaṇa, *esha prāno bhūtvā prajā bibharti tasmād esha bharatah* | "He becoming breath, sustains all creatures; hence he is the sustainer."

called *purusha medha* (human sacrifice) lasting five nights. He took it; he sacrificed with it. Having sacrificed with it, he surpassed all created things, and became all this. That man surpasses all created things, and becomes all this, who thus knowing, sacrifices with the *purusha medha*,—he who so knows this. The Purusha-sūkta is shortly afterwards quoted.

In chapter xi., 2, 3, 1 (p. 838) Brahma (in the neuter) is introduced as being the original source of all things:—"In the beginning Brahma was all this. He created the gods. Having created the gods, he placed them in these worlds, in this world Agni, Vāyu in the atmosphere, and Sūrya in the sky."

In chapter xiii., 7, 1, 1 (p. 1000), Brahma is described as sacrificing himself:—"The self-existent Brahma performed austerity. He considered, 'in austerity there is not infinity. Come let me sacrifice myself in created things, and created things in myself.' Then having sacrificed himself in all created things, and all created things in himself, he acquired superiority, self-effulgence, and supreme dominion (compare Manu, xii., 91). Therefore a man offering all oblations, all creatures, in the *śarvamedha* (universal sacrifice), obtains superiority, self-effulgence, and supreme dominion."

With the preceding passages relating to the creation of the world from primeval waters, through the medium of a mundane egg, may be compared the texts of later writers, where the same subject is treated (in some cases with an intermixture of later philosophical doctrines), such as Manu, i., 5, ff.; Rāmāyaṇa ii., 110, 2 ff.[1] Harivansa, verses 35 ff.; and 12425 ff.; Vishnu Purāna, i., 2, 45 ff.; Linga Purāna, i., 3, 28 ff.; Bhāgavata Purāna, iii., 20, 12, ff., &c.

I quote here some other interesting legends which I have observed in the Śatapatha Brāhmaṇa regarding Prajāpati, the creation of the gods, and the manner in which they acquired immortality, and became superior to the Asuras, or to other deities. The first two tell how Prajāpati himself became immortal.

Śatapatha Brāhmaṇa, x, 1, 3, 1, ff (p. 761).—"Prajāpati produced creatures. From his *upper breaths* he created the gods, and from his *lower breaths* mortal creatures. After the creatures, he created Death, the devourer. 2. Of this Prajāpati, half was mortal and half immortal. With that part of him which was mortal, he was afraid of Death. Fearing, he entered this (earth), having

[1] See Vol. xix. of this Journal, p. 307, note.

become two things, earth and water. 3. Death said to the gods, 'what has become of him who created us?' [They answered], 'fearing you, he has entered this earth.' Death said, 'let us search for, and collect him. I will not kill him.' The gods then collected him on this [earth]. The part of him which was in the waters, they collected those waters, and the part which was in this [earth], they [collected] that earth. Having collected both of these, the earth and the waters, they made a brick. Hence these two things make a brick, viz., earth and water. 4. Then these five parts of him were mortal, hair, skin, flesh, bone, and marrow; and these immortal, mind, voice, breath, eye, ear 6. The gods said, 'let us make him immortal.' So [saying], having surrounded this mortal part with these immortal parts, they made it immortal..... thence Prajāpati became immortal"

x, 1, 4, 1.—"Prajāpati was formerly both of these two things, mortal and immortal. His breaths were immortal, and his body mortal. By this rite, by this ceremonial, he made himself uniformly undecaying and immortal."

The next extracts tell how the gods acquired immortality.

Śatapatha Brāhmaṇa, x, 4, 3, 1 ff. (p 787).—"It is this year which is death; for it wears away the life of mortals by days and nights, and then they die; wherefore it is it which is death. Whoso knows this death [which is] the year,—it does not wear away his life by days and nights before [the time of] his decay: he lives through his whole life. 2. This [the year] is the ender; for it by days and nights brings on the end of the life of mortals, and then they die; hence it is the ender. Whosoever knows this ender, death, the year, it does not by days and nights bring on the end of his life, before his decay: he lives through his whole life. 3. The gods were afraid of this ender, death, the year [which is] Prajāpati, 'lest he should by days and nights bring on the end of our life.' 4. They performed these rites of sacrifice, viz., the *agnihotra*, the *darśa*, and *pūrṇamāsa*, the *chāturmāsyas* (oblations offered at intervals of four months), the *paśubandha*, and the *saumya adhvara;* but sacrificing with these rites they did not attain immortality. 5. They moreover kindled sacrificial fires; they celebrated *pariśrits*, *yajushmatīs*, *lokampriṇas*, without definite measure, as some now[1] celebrate them. So did the gods, but they did not attain immortality. They went on worshipping and toiling, seeking to acquire immortality. Prajāpati said to them, 'Ye do not celebrate

[1] This seems to be a polemical hit aimed by the author of the Brāhmaṇa at some contemporaries who followed a different ritual from himself.

all my forms; ye carry them to excess [?] and ye do not duly carry them out; hence ye do not become immortal.' 7. They said, 'Tell us how we may celebrate all thy forms.' 8. He said, 'perform 63 hundred *pariśrits*, 63 hundred and 36 *yajushmatīs*, and 10 thousand 8 hundred *lokampriṇas:* ye shall then celebrate all my forms, and shall become immortal.' The gods celebrated accordingly, and then they became immortal. 9. Death said to the gods, 'In the same way all men will become immortal, and then what portion shall remain to me?' They said, 'no other person shall henceforward become immortal with his body, when thou shalt seize this portion [the body]: then every one who is to become immortal through knowledge or work, shall become immortal after parting with his body.' This which they said, 'through knowledge or work,' this is that knowledge which is Agni, that work which is Agni. 10. Those who so know this, or those who perform this work, are born again after death; and being born, they are born for immortality. And those who do not so know, or those who do not perform this work, and are born again after death, become again and again his (death's) food."

Śatapatha Brāhmaṇa, xi, i, 2, 12 (p. 828).—"The gods were originally mortal.[1] When they obtained the year, they became immortal. The year is all: all is undecaying; by it a man obtains undecaying welfare, an undecaying world."

Śatapatha Brāhmaṇa, xi, 2, 3, 6 (p. 839).—"The gods were originally mortal. When they were pervaded by Brahma, they became immortal."

From the next passage, as from two others already quoted, it appears that Prajāpati himself was not entirely exempt from the power of death. Śatapatha Brāhmaṇa, x, 4, 4, 1 (p. 790).—"Sin, death, smote Prajāpati when he was creating living beings. He performed austerity for a thousand years to get free from sin."

The following legend describes how the gods became distinguished from, and superior to, the Asuras. Śatapatha Brāhmaṇa, ix, 5, 1, 12 ff.:

"The gods and Asuras, both descendants of Prajāpati, obtained their father Prajāpati's inheritance, speech, true and false, both truth and falsehood. They both spoke truth, and both [spoke] falsehood. Speaking alike, they were alike. 13. Then the gods, abandoning falsehood, adopted truth; while the Asuras abandoning

[1] See Śatapatha Brāhmaṇa, ii., 2, 2, 8 (p. 146), quoted in Part II. of my Sanskrit Texts, p. 388, note 36, for another legend on this same subject, in which the gods are said to have become immortal by another means.

truth, adopted falsehood. 14. The truth which had been in the Asuras, perceived this, 'the gods, abandoning falsehood have adopted truth; let me go thither.' So [saying, truth] came to the gods. 15. Then the falsehood which had been in the gods, perceived, 'the Asuras, abandoning truth have adopted falsehood; let me go thither.' So [saying, falsehood] came to the Asuras. 16. The gods [then] spoke entirely truth, and the Asuras entirely falsehood. Speaking truth alone (or devotedly) the gods became, as it were, weaker, and, as it were, poorer. Hence it happens that the man who speaks only truth, becomes as it were, weaker and poorer; but in the end he becomes [superior?]; for the gods became so in the end. 17. Then the Asuras, speaking only falsehood, increased like saline earth, and became, as it were, rich. Hence it happens that he who speaks only falsehood, increases like saline earth, and becomes, as it were, rich; but is overcome in the end, for the Asuras were overcome. That which is truth is the triple science (the three Vedas). Then the gods said, 'let us, performing sacrifice, spread this truth.'" The gods then performed a variety of sacrifices, which were always interrupted by the arrival of the Asuras. At length, 27. "When these had gone, they instituted the third *savana*, and accomplished it. That which they accomplished, they obtained entirely true. Then the Asuras went away, and these gods became [superior and] the Asuras were worsted. The man who knows this becomes in his own person superior, and his hater, his enemy, is defeated."

The next legend explains how inequality was introduced among the gods. Śatapatha Brahmāṇa, 4, 5, 4, 1 (p. 397 f.):—"Originally the gods were all alike, all pure. Of them, being all alike, all pure, three desired: 'May we become superior,' viz., Agni, Indra, and Sūrya (the sun). 2. They went on worshipping and toiling. They saw these *atigrāhyas*;[1] they took them over and above. Because they did so, these draughts (or cups) were called *atigrāhyas*. They became superior. As they [obtained?] thus, as it were, superiority, so superiority is, as it were, acquired by the man, of whom, when he knows this, they receive these *grahas* (draughts, or cups). 3. Originally there was not in Agni the same flame, as this flame

[1] By this name are called "three particular *grahas*, or sacrificial vessels, with which libations were made in the Jyotishṭoma sacrifice to Agni, Indra, and Sūrya." Prof. Goldstücker's Diet. The word is explained by Boehtlingk and Roth, as meaning "*haustus insuper hauriendus*," a draught to be drunk over and above; the designation of three fillings of the cup, which are drawn at the Soma offering.

which is [now] in him. He desired: 'May this flame be in me.' He saw this *graha*, he took it; and hence there became this flame in him. 4. Originally there was not in Indra the same vigour, etc., etc. [as in para. 3.] 5. Originally there was not in Sūrya the same lustre, etc., etc. [the same as in para. 3.] That man has in himself these forces, these energies, of whom, when he knows this, they receive these *grahas*."

It is already known from the remarks made by the late Professor Wilson, in the introduction to his translation of the Rig Veda (vol. i., pp. xxxvii. ff., and vol. ii., p. ix. ff.) that the god Rudra, as represented in the hymns, is very different from the deity (Mahādeva) to whom the same name is applied in the later mythology. I shall not inquire here what the Vedic conception of Rudra was (a subject which has also been discussed by Professor Weber in his "Indische Studien," ii., 19 ff; see also pp. 30, i. ff.); but shall merely quote the two following legends; the first from the Śatapatha Brāhmaṇa, (vi., 1, 3, 7 ff.,) in which Rudra is represented as a form of Agni, and which appears to be the original from which the legends of the birth of Rudra in the Vishnu Purāna (Wilson, p. 58), and in the Mārkandeya Purāna, sect. 52, are derived:—

"This foundation existed. It became the earth (*bhūmi*). He extended it. It became the broad one (*prithivī*). On this foundation beings, and the lord of beings, consecrated themselves for the year (*samvatsara*). The lord of beings was a householder, and Ushas (the dawn) was his wife. Now these beings were the seasons. That lord of beings was the year. That wife Ushas was Aushasī (the daughter of the dawn).[1] Then those beings and that lord of beings, the year, impregnated Ushas, and a boy (*Kumāra*) was born in a year. The boy wept. Prajāpati said to him, 'Boy, why doest thou weep? since thou hast been born after toil and austerity.' The boy said, 'My sin, indeed, has not been taken away, and a name has not been given to me. Give me a name.' Wherefore when a son has been born (to any man) let a name be given to him; that takes away his sin; and (let) also a second and a third (name be given) in succession; that takes away his sin. Prajāpati said to him, 'thou art Rudra.' Inasmuch as he gave him that name, Agni became his form, for Agni is Rudra. He was

[1] I am unable to explain how Ushas, the dawn, is here identified with her own offspring, Aushasī.

Rudra because he 'wept' (*arodīt*, from *rud*, 'to weep.') The boy said, 'I am greater than one who does not exist: give me a name.' Prajāpati replied, 'Thou art Sarva.'[1] Inasmuch as he gave him that name, the waters became his form, for the waters are Sarva (All), because all this is produced from the waters (see above, p. 38). The boy said, 'I am greater than one who does not exist: give me a name.' Prajāpati replied, 'Thou art Paśupati.' Inasmuch as he gave him that name, the plants became his form, for the plants are Paśupati. Hence, when the beasts obtain plants, they became lords (or strong?). The boy said, 'I am greater than one who does not exist: give me a name.' Prajāpati said to him, 'Thou art Ugra.' Inasmuch as he gave him that name, Vāyu (the wind) became his form. Vāyu is Ugra (or, the 'fierce'); wherefore when it blows strongly, men say, 'Ugra blows.' The boy said, 'I am greater than one who does not exist: give me a name.' Prajāpati said to him, 'Thou art Aśani.' Inasmuch as he gave him that name, Vidyut (Lightning) became his form. Lightning is Aśani. Hence they say that Aśani has struck a man whom lightning strikes. The boy said, 'I am greater than one who does not exist: give me a name.' Prajāpati said to him, 'Thou art Bhava.' Inasmuch as he gave him that name, Parjanya (the god of rain) became his form. For Parjanya is Bhava (Being); because all this (universe) arises from Parjanya. The boy said, 'I am greater than one who does not exist: give me a name.' Prajāpati replied, 'Thou art the Great god (*Mahān devaḥ*).' Inasmuch as he gave him that name, Chandramas (the Moon) became his form. Prajāpati is the Moon: Prajāpati is the 'Great god.' The boy said, 'I am greater than one who does not exist: give me a name.' Prajāpati replied, 'Thou art Īśāna (the ruler)'. Inasmuch as he gave him that name, Aditya (the Sun) became his form. For the Sun is Iśāna; because he rules over this universe. The boy said, 'I am so much: do not give me any further name.' These are the eight forms of Agni. Kumāra (the Boy) is the ninth. This is the threefoldness (*trivṛittā*) of Agni. Since there are, as it were, eight forms of Agni, the gāyatrī metre has eight syllables. Hence men say, 'Agni pertains to the Gāyatrī.' This boy (*kumāra*) entered into the forms. Men do not see Agni as a boy: it is these forms of his that they see; for he entered into these forms."

[1] The origin of this name may perhaps be found in Rig Veda x, 61, 19, where these words occur, "This is my centre, here is my abode, these are my gods, this is I Sarva (or All), &c."

The same legend is given in a somewhat different form in the Śānkhāyana or Kaushītakī Brāhmaṇa, and an abstract of the passage has been furnished by Professor Weber in his Indische Studien, ii., 300 ff. The following translation has been made from a copy taken from the MS. in the Bodleian Library, for which I am indebted to the kindness of Dr. Aufrecht:—

Śānkhāyana Brāhmaṇa, vi, 1.—"Prajāpati being desirous of progeny, performed austerity. From him, when he had performed austerity, five (children) were produced, Agni (fire), Vāyu (wind), Aditya (sun), Chandramas (moon), and Ushas (dawn) the fifth. He said to them, 'Do ye also perform austerity.' They consecrated themselves. Before them, when they had consecrated themselves, and had performed austerity, Ushas (dawn), the daughter of Prajāpati, assuming the form of a celestial nymph (*Apsaras*), arose. Their attention was riveted upon her." As a result of this appearance of Ushas, "a being arose with a thousand eyes, a thousand feet, and a thousand arrows.[1] He came to his father, Prajāpati, who asked him, 'Why dost thou come to me?' He answered, 'Give me a name: I shall not eat this food, so long as no name has been given to me.' 'Thou art Bhava,' said Prajāpati, for Bhava is the waters. Therefore, Bhava does not slay this man, nor his offspring, nor his cattle, nor any (creature of his) who speaks. And further, whosoever hates him, is most wicked. Such is not the case with him who possesses this knowledge. His rule is, Let a man wear a garment.

"He (this newly formed being) came a second time to Prajāpati, who asked him, 'Why dost thou come to me.' 'Give me,' he replied, 'a second name: I shall not eat this food with only one name.' 'Thou art Śarva,' Prajāpati answered, for Śarva is Agni. Therefore Śarva does not slay him, nor his cattle, nor any (creature of his) who speaks. And further, whosoever hates him is most wicked. Such is not the case with him who possesses this knowledge. His rule is, Let not a man eat every sort of food.

"He came the third time to Prajāpati, who said to him, &c. 'Thou art Paśupati,' Prajāpati answered, for Paśupati is Vāyu (wind). Therefore Paśupati does not slay, &c. His rule is, let no one slander a Brahman.

[1] *Pratihitābhiḥ.* This word (as I learn from the Indische Studien) is explained by the commentator, Vināyaka Bhaṭṭa, as equivalent to *pravṛittibhiḥ* "energies." Weber renders it by "arms." Dr. Aufrecht informs me that the word has in the Rig Veda the sense of "arrows."

"He came the fourth time to Prajāpati, who said to him, &c. 'Thou art Ugra deva (the fierce god),' Prajāpati answered, for Ugra deva is plants and trees. Therefore Ugra deva does not slay, &c. His rule is, Let not a man look upon the shame of a woman.

"He came the fifth time to Prajāpati, who said to him, &c. 'Thou art Mahān deva (the great god),' Prajāpati answered, for Mahān deva is Aditya (the sun). Therefore Mahān deva does not slay, &c. His rule is, Let no man look upon him (the sun) rising or setting.

"He came the sixth time to Prajāpati, who said to him, &c. 'Thou art Rudra,' Prajāpati answered, for Rudra is Chandramas (the moon). Therefore Rudra does not slay, &c. His rule is, Let no man eat anything decomposed (?) or any marrow.

"He came the seventh time to Prajāpati, who said to him, &c. 'Thou art Iśāna,' Prajāpati replied, for Iśāna is food. Therefore Iśāna does not slay, &c. His rule is, Let no one reject him who desires food.

"He came the eighth time to Prajāpati, who said, &c. 'Thou art Aśani,' Prajāpati replied, for Aśani is Indra. Therefore Aśani does not slay, &c. His rule is, Let a man speak truth, and possess gold.

"This is the Mahān deva (great god) who has eight names and eight forms. The progeny to the eighth generation of the man who possesses this knowledge, eats food, and ever wealthier men will be born among his descendants."

ART. IV.—*Brief Account of a Javanese Manuscript, in the possession of the Society, and entitled "Babad Mangku Nagárá."* —By G. K. NIEMAN, ESQ.

THE subject of this manuscript is the War of the celebrated prince Mangku Nagárá against the Dutch and their allies, which began in the latter half of the 17th century. The language is the modern Javanese, with here and there a word or two in Kavi, the ancient poetical idiom of Java, and in one passage wholly in Kavi. The composition is metrical; the metre is that which is usually employed in works of this nature, and the style is somewhat monotonous. The MS. is dated in the Javanese year 1724 (A.D. 1798), and the owner, and perhaps author of the work, is stated at the end to be Rader Fumenggung Suma diningrat.

The principal details of the war of Mangku Nagárá are known to the student of Javanese history from Sir Stamford Raffles's "History of Java," with which the MS. generally agrees; and therefore although little interest will be felt in the work on this score, there are some particulars in it which serve to illustrate the mode of warfare, as well as the manners and customs of the people. I will, therefore, select such passages of the manuscript as may be likely to afford an interest of this sort, confining myself to such portions as are not mentioned by Raffles.

Manghu Nagárá is always depicted not only as a brave and valiant, but also as a very religious man. His soldiers and those of Mangku Bumi, who was at one time his ally, were steady adherents of the rites of Islam, so far as they were enabled to observe them; such as ablutions, prayer, the Fast of Ramadan, and other practices of the Moslem. His confidence in the power of Allah, and his submission to His will when in distress, are praised, and his character is contrasted with that of the cruel Mangku Bumi, who put two of his wives to death for the most trifling offences, such as neglecting to offer him his coffee. Mangku Nagárá, on the contrary, is described as greatly attached to his wives and children, carefully providing for their safety, and visiting them at their places of concealment, whenever he could snatch a temporary

interval from his duties as a warrior. Attachment to his family and attention to religious observances seem to have been thought quite compatible with a strong attachment to the sex generally; we find him at the village of Zamenang engaged for two months in copying the Koran and other religious works, and yet frequently amusing himself with the Bedaja, or dancing girls, from whom he was unable to separate himself in his retirement. Mangku Bumi had the imprudence to deprive him of two of these women, whom he had previously presented to him as a mark of kindness; and although he subsequently restored one of them to Mangku Nagárá, this prince could not pardon the offence. The one that Mangku Bumi did not restore appears to have been especially a favourite of Mangku Nagárá, whose grief and resentment were aggravated by some other offences; and the Dutch Governor of Samarang took advantage of this disposition to urge him to forsake the cause of Mangku Bumi. His efforts were at first successful, and Mangku Nagárá made peace with the Dutch and declared war against Mangku Bumi; but this state of things did not continue long. War soon recommenced between the Dutch and Mangku Nagárá, from some cause which does not fully appear. It is believed that the latter was unable to prevent his adherents from quarrelling with and attacking the Dutch; but the fact is, that Mangku Bumi finding himself unable to resist the united forces of Mangku Nagárá and of the Dutch, found means to effect a reconciliation with the latter, and by their mediation received from the Sunan Zaku Buwana nearly a half of the empire of Mataram, assumed the title of Sultan, and fixed his residence at Jotjokarta, the Sunan residing at Solo, or Surakarta. This division of the Empire took place in A.D. 1755. From this epoch the power of the unfortunate Mangku Nagárá declined. Mangku Bumi made common cause with the Dutch and the Sunan against him, and the desertion of several of his adherents, who now joined his relentless enemies, left him no rest. He was hunted from place to place like a wild beast, until he resolved, in his despair, to fall upon his numerous foes, in the persuasion that he should perish in the strife. Forty of his bravest friends joined in this resolution; their example encouraged the few troops who remained with him; they attacked their enemies with desperate courage, and unexpectedly gained a great victory. The Dutch were wholly defeated; nearly a hundred of them were left dead on the field of battle, and, better than all, his brave and indefatigable enemy, Van der Zoll, the Dutch commander, perished in the fight. Mangku Nagárá's success, however, was not per-

manent: he was defeated in the next battle, and although the war continued with varying success, sometimes to the advantage of one side and sometimes of the other, his cause gradually declined. It was a guerilla war; Mangku Nagárá was now flying to the mountains of Kerdenz, and now issuing forth to fall upon and harass his enemies, but upon the whole his losses were predominant, and the manuscript ends with the account of the peace he was compelled to submit to, and the conditions on which it was concluded; all this may be read in "Raffles's History."

The last six pages contain an enumeration of all the various fights in which Mangku Nagárá was personally engaged.

It is necessary to remark that Mangku Nagárá is called by Raffles Zaku Nagárá;* but this name never occurs in this MS., nor in "Crawford's History of the Indian Archipelago," nor in the Dutch works of Roorda van Eysinga, or Winter, or any others. The two á's in the name Nagárá are pronounced broad, as in the word "water," and the word is often written "Negoro" by Dutch authors.

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* Corrected in the second edition of Raffles.

ART. V.—*On the Language of the Afghans.*—By Viscount STRANGFORD.—Part I.

IN 1839 the British Government committed itself to an undertaking which practically amounted to the conquest, military occupation, and civil administration of a remote mountain land, inhabited by a savage and warlike race, animated by the strongest feelings of nationality. Yet it was all but wholly unprovided with the means of acquiring or imparting a knowledge of the difficult and peculiar language in which that nationality found its strongest expression and support. Such knowledge, indeed, was not absolutely indispensable for the purposes of official or social intercourse and correspondence. The requirements of current business were sufficiently met by the employment of Persian, generally known among the educated classes of Afghans, and strictly vernacular with that large population of Afghanistan which is Persian in its origin and Shiah by religion. But the inner life and distinctive character of the Afghans remained a sealed book for want of a knowledge of Pushtu. A vocabulary inserted at the end of Mounstuart Elphinstone's travels, a translation of the New Testament into Pushtu, and a brief grammatical sketch and vocabulary by Major Leach, constituted at that time the whole of the materials accessible to the English or Anglo-Indian student desirous of making himself acquainted with this language. These were scanty in amount, of little use for practical purposes, and of not much intrinsic value. The translation of the Testament was executed with haste and carelessness; and, though every allowance must be made for the zeal of the translators and the difficulties of a little-known, and, to them, uncultivated language, with the literature of which they were evidently unacquainted, such an error as the often-quoted rendering of "Judge not, that ye be not judged," by words meaning "Do not practice equity, lest equity be practised towards you," was more than mere inaccuracy in Pushtu, as it indicates fundamental ignorance of the real meaning of *insāf*, a word universal and of quite common and vernacular use in every language spoken by Mahometans. Leach's grammatical sketch goes a very little

way in facilitating the student's progress, being slight, imperfect, and not always accurate or consistent in rendering Afghan sounds into Roman letters; but his dialogues are original, animated, and apparently idiomatic. An ode of Rahman, subjoined to his sketch, is so disfigured with bad misprints that it is of no use to any one who is not proficient enough to restore the text by means of the translation at the side: in other words, it is useless to a learner. As this work bears the official countersign of Mr. Torrens, certifying it to be a "true copy," the responsibility of these misprints must be borne at least as much by the censor as by the author. The late Dr. Leyden appears at one time to have turned his attention to Pushtu, and to have succeeded in adding some knowledge of that language to his other great and varied accomplishments. A memoir by him on the Roshenian sect, in the 11th volume of the Asiatic Researches, contains some extracts from the Makhzan i Pushtu, the earliest extant work in the language,[1] and the main authority for his subject. This, however, was not philology, and he added nothing to our knowledge of the language. A gallant and distinguished officer, Lieutenant Loveday, whose barbarous murder, at the instigation of the dispossessed Khan of Khelat, caused a deep and painful sensation in England at the time, is understood to have contemplated a systematic study of Pushtu, with a view to publishing the result; a project which was abruptly stopped by his untimely death.

It must not be supposed that the same neglect or disregard of the claims of the Pushtu language, which so markedly characterized the period at which our political relations with the Afghan states acquired a sudden and prominent importance, had always prevailed among the authorities in India. Early in the century the East India Company, always the ready and munificent patron of Oriental studies, authorized a learned native gentleman, Mohabbet Khan, son of the famous Rohilla chief, Hafiz Rahmat Khan, to draw up a grammatical sketch of Pushtu, together with a vocabulary, the whole being written and explained in Persian. No current practical use appears to have been made of this work in India; but two copies of it were found by Professor Dorn of St. Petersburg in the East India Company's Library in London, and the learned Professor was thereby supplied with the groundwork of

[1] Captain Raverty, however, in a letter contained in the "News of the Churches," of February 1st, 1861, mentions the existence of at least two older works, of one of which, the "History of the Yusufzai Tribe," he was able to obtain a copy.

his subsequent valuable labours in the field of Pushtu grammar, a study which he was the first to establish on anything like an accurate and scientific basis.

From the commencement of the century, continental philologists had begun to include the Pushtu among the objects of their research. Owing to the scantiness of the material upon which they had to work, their labours were mostly imperfect and untrustworthy, and are described by subsequent investigators as abounding in errors. The researches of this period are represented by the Afghan portion of Klaproth's Asia Polyglotta, and by the treatises of Eversmann and Wilken. A marked improvement on these was a brief notice by Ewald, in which the great Semitic scholar pronounced decisively upon the un-Semitic character of the language, which, indeed, no philologist, with any genuine materials before him, could fail in perceiving at a glance.

But Professor Dorn was the first to publish *in extenso* a real grammar and vocabulary of the language, and to determine its true philological character and affinities with accuracy in detail. Not having lived in the country, however, and having had few or no opportunities of acquiring the language in a living form by oral and vernacular intercourse with natives, his works are described by Captain Raverty as not being wholly free from error, at least in their lexicographical portion, where the meanings of several Afghan words are stated to be merely "guessed at." Considering the comparative want of resources at the Professor's command, it is more to be wondered at that so much precision and accuracy should have been attained, and that Captain Raverty, a ready censurer of the errors and shortcomings of his precursors, should have found so little cause of complaint.

Our associate, Captain Richard Burton, the celebrated traveller, contributed an interesting article upon Professor Dorn's work to the proceedings of the Bombay Asiatic Society for 1849, in which, from his having acquired both a literary and a vernacular knowledge of Pushtu during his service in Upper Sindh, he was able to supply many valuable additions and corrections to the work in question.

The first Pushtu Grammar written in English, and containing more than a mere outline of the rules of the language, is the useful and unpretending little work of Colonel Vaughan, published at Calcutta in 1854, and followed in 1855 by a second volume, containing an English-Pushtu vocabulary. This work is entirely practical, and does not meddle with philology or grammatical

theory; its use, therefore, is less for the comparative philologist or the ambitious student of Afghan literature than for the soldier or the man of business desirous of obtaining a knowledge of the elementary rules and common words of the language by a simple and easy method. Its accuracy, though not unimpeachable, is quite sufficient for the ordinary purposes of business, or the rough and ready wants of the officer; and it only requires more idiomatic phrases and dialogues to be pronounced by far the most practically useful, if not the most theoretically perfect, of existing Afghan Grammars. Colonel Vaughan's Grammar was immediately followed by Captain Raverty's more complete work. It is to the latter gentleman that the credit undoubtedly belongs of being the first student to combine a mastery of vernacular Pushtu, acquired upon Afghan ground, with a thorough knowledge of its literature—a literature far more extensive in its records, and of greater intrinsic merit, than is generally supposed, even among Orientalists. He has communicated to the public the results of many years' labour in a series of works apparently intended to comprise the whole subject of the Pushtu language and literature in all its branches. These works consist of a full grammar of the language, which has reached a second edition; of a dictionary, Pushtu and English, having the advantage of a transcription of the Pushtu words in Roman letters; of a Chrestomathy, or series of selections from the prose and poetical writings of the best authors; and of a literal English version of the poetical portion of the last-mentioned work, preceded by a popular introduction to the subject. Whatever may be the merits or demerits of the system upon which Captain Raverty has deemed it advisable to construct his grammar and explain its rules, it is probably beyond doubt that his works contain a complete and trustworthy record of all its actual facts; and it is in this point that the real value of these works lies. The accumulation of materials by the linguist is a matter of primary necessity to the philologist, without which the latter is unable to pursue his science with any prospect of success; and in the present case his gratitude is fairly due to Captain Raverty for the ample store of such material which he has placed at the disposal of the learned public at home and abroad.

When the linguist who is no philologist, but has mastered a language by rule of thumb or routine study, contents himself with a plain statement of the grammatical facts of that language, respects the limits of his own and his fellow-workman's art, and refrains from dogmatizing on those problems in philology and

ethnology which lie beyond those limits, he acquires the good-will of his readers, and the voice of censure or criticism passes over his occasional slips or mistakes in silence. It is quite allowable in a writer upon language at Peshawar, who has lived most of his life cut off from Europe, to treat M. Klaproth, who died some thirty years ago, as a living author, or to be manifestly ignorant of the processes and chief results of the science of comparative philology. But if he lends the weight of a name and authority fairly earned by the successful cultivation of one branch of study to the reiteration of baseless, untenable, and exploded theories in ethnology, the utter futility of which a proper view of his own special study should have led him to perceive, and to the support and propagation of such theories by arguments of his own, wholly unworthy of serious consideration, he incurs a heavy responsibility, and he has no right to complain if he becomes the object of severe comment. These remarks are unavoidable in the presence of Captain Raverty's various prefaces to his works, especially that to his Grammar, and of a very able paper by Dr. Löwenthal, a missionary at Peshawar, which appeared in the Journal of the Bengal Asiatic Society for 1860 (No. IV.), under the title of "Is the Pushtu a Semitic Language?", animadverting in detail upon the arguments contained in the above prefaces, where Captain Raverty makes himself the advocate of that curious delusion, the Semitic character of the Afghan language and the Jewish origin of the Afghans. Incidentally, the Doctor has brought forward many new and most valuable illustrations of the Pushtu phonetic system and vocabulary, as also, in a less degree, of its forms; and it is therefore all the more to be regretted that he should have been thus forced to treat this really necessary and important branch of inquiry as an object secondary to the refutation of an absurd theory, in which no one capable of appreciating his arguments now believes, and the believers in which seem to be proof against his or any other man's demonstration.

"Error is immortal," says Dr. Löwenthal, with perfect truth, and it would therefore be sheer waste of time to try and kill the Semitic theory, or to gainsay a writer like the Rev. Mr. Forster, when he tells us that "āsmān" is a Pushtu word, derived from the Hebrew "samim" (*sic*) with the article "hesamim" (*sic*); that "ōr" is Pushtu for "light" (which it is not), as in Hebrew; that the Hebrew "nahar," "a river," is contained, in that sense, in a Pushtu compound (not a word of which is true); and that therefore the Pushtu is a Semitic language. It is more to the purpose to inquire

how Sir William Jones came to countenance this theory, as he unquestionably may be said to have countenanced it, when he stated the Pushtu to be an actual dialect of Chaldee. It is probable that his opinion, in the first place, was uttered more or less at random, and was hastily conceived, without more than a mere cursory examination of the language. In the second place, one or two remarkable, though superficial and accidental, coincidences do really exist. The genitive is formed in Chaldee by a prefixed *di* or *d'*, in Pushtu by *da*. They are wholly unconnected in origin, as the Chaldee word is simply the Aramaic relative pronoun, while the Pushtu word is probably part of the demonstrative pronoun *dagha*.[1] Dr. Löwenthal compares it with the Latin *de* and the Polish *od;* referring both—the former, after Bopp, conjecturally—the latter, with certainty, to the Sanskrit *adhas*. The demonstrative pronouns, moreover, are not unlike in the two languages at first sight. The Chaldee *dēk*, *dēn*, *hādēn*, *dāk*, *dā*, masc. and fem. "this," resemble the Pushtu pronouns *hagha*, *dagha*, on the surface, but are of quite different origin. Rawlinson compares *hagha* with a presumed Zend from *hakha*, corresponding to the Sanskrit *sasva;* but as the Pushtu *gh* rarely, if ever, answers elsewhere to the Zend *q* or *kh*, *gha* is more probably a mere phonetic or inorganic increment, while the *da-* and *ha-* are no doubt respectively cognate with the Zend demonstrative *ha*, Sansk. *sa*, and the Zend and old Persian base *da*, found in the enclitic pronouns *-dim*, *-dis*, in the inscriptions *-dish*. Whether these dental bases, which are found both in the Semitic and the Aryan languages, be real instances of primeval connection or mere accidental coincidences, is a question to be determined only by Semitic and Aryan philologists of the highest authority and experience respectively, such as Ewald and Müller: it is, at all events, quite certain they are no evidence whatever of special and distinctive affinity between the Semitic languages and Pushtu. The word *or*, "fire," probably reminded Sir William of the well known Semitic word for light, and it is possible, though not probable, that he may have remarked a curious resemblance to the ordinary process of

[1] Dr. Trumpp compares it with the Punjabi postfix *da*, which he shows to be originally an ablative derived from the Prakrit *do*, itself a corruption of the Sanskrit *-tas*. It is more convenient, however, to assign Pushtu forms to a native and Iranian origin, as long as it is possible to do so without violent assumptions. *Hagha* is also found in Assyrian in exactly the same form, but in the sense of the near, not, as in Pushtu, the remote demonstrative. *Ha-* is, without doubt, the Zend *vha*, Sanskrit *sa*, old Persian *ha-uva* (Sk. *sa-sva*), whence the Persian *ō*, in modern pronunciation *ū*.

formation or derivation of words in Arabic in such instances as the Pushtu *tōr*, black, *tiāra*, blackness: a change not easily explained, from our not possessing the Pushtu language in any other than a quite modern form, and our having, therefore, but limited means of comparison. The above examples, it may be said, constitute the amount of those "treacherous indications," to use the words of Dr. Dorn, which misled the great linguist and man of letters into the hasty utterance of an opinion which has been employed to shelter idle theories that its gifted author would have been the first to disavow and refute, had he lived long enough to become acquainted with the modern science of Comparative Philology, of which he himself unconsciously helped to lay the foundations.

It may be worth while here to call attention to the undue stress which has been laid upon the so-called native tradition of the Afghans, connecting them with King Saul, son of Kish, and upon the name of Beni Israil, which they are said to give themselves, at the same time that they reject the title of Yahudi. This affiliation of themselves upon a historical personage of the Old Testament is in their case looked upon as an exceptional and unique phenomenon, instead of being, as it really is, the rule in all analogous cases. Wherever a rude and uncultivated people have been brought within the pale of Islam, they have never failed to connect themselves with the traditionary quasi-Biblical ethnology of their conquerors or spiritual instructors through some patriarch or hero of Scripture, the knowledge of whom was derived by the early Mussulmans from corrupt Jewish sources. Thus the old Turkish traditions of Central Asia make an eponymus for that race after the usual process, out of its own national title, and connect them with Japhet under the name of *Yafet oghlan Turk*, Turk son of Japhet: and the Berbers or Amazigh of North Africa make eponymi out of their native and their Arabic names, and affiliate themselves upon Ber, son of Mazigh, nephew of Canaan, grandson of Ham. The Persian civilization and native religious and heroic traditions were far too strong and deep seated to yield to this process, and in Persia, accordingly, there are no traces of it to be met with. As for Beni Israil, it is obviously, and on the face of it, a mere Molla's Arabic phrase, derived from books, and, therefore, those who represent it as a national title prior to, and independent of, Mahometan influence, do what is equivalent to putting Latin words with a Latin construction into the mouths of the Highland clans of Scotland previous to the Christian era.

The most complete analogy to this so-called Pushtu tradition is

furnished by that of the Gipsies, which affords, perhaps, the most perfect and typical example of a spurious and insitive tradition, as opposed to a genuine home-grown one, having been instantly and universally adopted by a race from its neighbours, and by it passed off in turn upon the latter as being really its own. In every country of Western Europe where the Gipsies made their first appearance during the course of the fifteenth century, their invariable reply to all questions as to their race and origin was the legend that they were the descendants of Egyptians who had inhospitably driven the Virgin Mary from their doors. On the faith of this, their Egyptian origin was always recognised in Europe as a matter of orthodox belief, until Grellman published his researches based upon an investigation of their language; and this delusive belief stands recorded in three extreme points of Europe, by the English, Spanish, and modern Greek names of this race, *Gipsy*, *Gitano*, Γύφτος. The legend is not found among any Asiatic Gipsies, and was manifestly forced into the mouths of the European wanderers by the leading questions of their Christian interrogators. It vanished into air at once before the first examination of the Gipsy language, from which we are now enabled to know not only whence they came, but from what particular part of India they came, and through what countries of Western Asia and Eastern Europe they passed on their way to the west. The strong elements of Persian, Byzantine Greek, and Wallachian, which their language contains, suffice to show their route as clearly as a written itinerary. The acquired and spurious tradition of the Jewish origin of the Afghans appears to have its exact parallel in the above fable of the Egyptian origin of the Gipsies. It would be an interesting inquiry to ascertain how far the former is really current among the Afghans, and whether it is to be met with at all among the clansmen and primitive classes, living comparatively out of the reach of the influence of Mollas.

It is impossible to conclude this brief notice of the Jewish or Semitic theory without expressing great regret that Captain Raverty should have thought it answered any practical or scientific end to support his paradoxes with regard to the language by arguments derived from the fact that numerous Arabic words are contained in the Afghan vocabulary, and from the use of the technical terms of Arabic grammar in the treatment of their own language by Afghan grammarians. If Pushtu be Semitic for the former of these reasons, so is every language spoken by populations professing Mahometanism; if for the latter reason, so is every language that has ever been grammatically taught and cultivated

by Mahometans; and we therefore must fain look on Persian and Turkish, Malay and Mandingo language, French and modern Greek as comprised, one and all, in the category of uniform Semitism, on the strength of their being expounded by Turkish, Arab, or native teachers, through the technical apparatus of *ism* and *fi'l*, and *māzi* and *muzāri'*.

The real fact is, that the language of the Afghans corresponds, with great and exceptional exactness, to the position in which we should be inclined to place it upon *à priori* grounds, from a mere consideration of the geographical conditions and political history of the country in which it is spoken. We should expect to meet with a language descended from either the ancient speech of India or that of Persia. We should be more inclined, upon geographical grounds, to favour the Persian alternative, as the highlands of Afghanistan, even now called Khorasan by the inhabitants of the plains of the Indus below the passes, and thus, by them, identified with Persia, belong physically to that country rather than to India. At the same time, we should look for the evidences of the language of the Afghans having been powerfully influenced in its formation by the neighbouring dialects of India, as well as by the vernacular form of its more ancient and cultivated language; and we should expect the vocabulary of a mountain tribe, that never worked out its own civilization, but has always adopted that of its settled and powerful neighbours, so far as it is civilized at all, to be fully loaded with importations from those languages in all their different stages. The result which, upon inquiry, we do find, precisely corresponds with all these expectations. There is no reason for doubting that the forms Πακτυες and Πακτυϊκὴ χώρα, met with in Herodotus, express the modern national name of Pushtu in the pronunciation of the Eastern Afghans, with whose geographical position they completely coincide. They are of sufficient importance for the contingent supplied by them to the host of Xerxes to be noticed by the Greek historian, at the same time that they do not constitute a special satrapy, nor is any such satrapy mentioned either by Herodotus or in the Behistun or Naksh i Rustam inscriptions. It is probable that they were at this time a mountain tribe of limited extent and importance, situated in the most easterly parts of their present area, upon whom the Achæmenian yoke sat lightly, but dependent upon some one or more of the great adjoining satrapies of Gandára, Thatagush, Haraiva, Hara'uvátish, or Hindush; settled countries with a population, then, as now, with the exception of the last, almost entirely pure Iranian, and speak-

ing a form of Persian, of which if it were not actual Zend, at all events Zend is the nearest representative that has come down in documents to our time. The distinction between the Pushtu as we now have it and the Persian languages, properly so called, in their various forms and stages, is so deeply and clearly marked, that it is reasonable to conclude that, even at this early period, a considerable difference already existed between the Zend or old Aryan of the plains and the contemporary form of Aryan then spoken by the ancestors of the Afghans, from which the present Pushtu is descended. This separation must have been widened and rendered permanent by the absence of Persian, and great preponderance of Indian, influence, to which Eastern Afghanistan was subject during the whole period between the downfall of Achæmenian power and the rise of Islam. The traces of Græco-Bactrian and Indo-Scythian dominion and influence to be met with in the Pushtu language are imperceptible, but the constant intercourse with India, and the direct Indian rule, which prevailed during most of this period, have left a strong and indelible stamp on Pushtu, not only in its vocabulary, but even in its forms, idiom, and general character. So strong and pervading is this effect, that it is not easy to determine, without minute investigation. whether the Pushtu is to be ranged among the Indian or Iranian dialects. The nature of the words which it has borrowed from the Indian dialects is sufficiently remarkable, as indicating the source whence the Afghans obtained many of the rudiments of civilization and the means of expressing them. *To write*, for instance, is called by the Indian root *likh*, not the Persian *pish*. Even to the present day many insulated tribes in the Hindu Kush, such as the Dir, Tirhai, Laghmani, and Pashai, specimens of whose languages are given by Major Leach, speak dialects of distinct Indian rather than Iranian origin, and therefore ethnologically represent either an actual population of Indian ancestral settlers, or else of a thoroughly Indianized native race. Far more important than all these are the Siāh-pūsh Kafirs of Kafiristan, whose language, as exhibited and illustrated by Dr. Trumpp in a late number of this Journal, is a genuine Indian dialect, and whose physical character, at all events in the instance of the men seen by the Doctor, is no less Indian than their language. The safest general conclusion about the Pushtu would seem to be, that it is the descendent of a language belonging to the western rather than the eastern branch of the true Aryan people, and therefore allied more intimately with Zend than with Sanscrit; but that, during the period of the disintegration of the old Persian languages and the gradual

formation of the modern Persian, it was from political causes far more exposed to Indian than to Persian influences; this period being that in which the spoken Sanskrit language was ceasing to be vernacular in its purest form, and was gradually becoming corrupted into the colloquial Prakrit forms, which are now generally acknowledged to have immediately preceded, and truly and directly given birth to, the modern vernaculars of Northern India. The Neo-Indian dialects, while thus undergoing the process of formation, powerfully affected the Pushtu while itself in the same presumed transitional state, and the Persian does not seem to have recovered its lost influence until it had substantially acquired its modern form under the late Sassanians and in the post-Islamic period. Since then it has modified the whole nature and character of the Pushtu, which in its modern, and especially its literary form, appears entirely recast in a Persian mould. Yet it is quite possible to determine, in a majority of instances, not only whether Pushtu words, of which the affinity with Persian is evident at first sight, have been directly adopted from the latter language, or belong strictly and originally to Pushtu; but even, in the former of these cases, to ascertain within some sort of limits at what period and from what stage of the Persian they have been adopted.

In order to assign to the Pushtu its proper position among the Iranian languages, it is necessary to enumerate briefly, yet with sufficient detail, the different dialects of which that important group consists, according to the most natural classification and arrangement of which they admit. For this purpose it is convenient to assume the Persian language proper as the central unit or standard of comparison, by which to test the nearness and remoteness of the affinity of the rest. This arrangement is natural as well as conventional, for the Persian language covers more time in its records and more space in its distribution than any of the others, and occupies a position central to, conterminous with, and directly influencing all, or nearly all, of them. By the Persian language proper is understood, firstly, the old language of the Achæmenian inscriptions, the direct parent of modern Persian, to which may be added the two dialects —whether they be contemporary dialects or successive stages—of the Zend, most intimately allied with old Persian; the transitional dialects spoken during the Sassanian period, comprising the lapidary, numismatic, and literary Pehlevi, in so far as it is Aryan, and stripped of its Semitic element, and the language formerly called Pazend, but now generally known as Parsi, differing very slightly, if at all, from the former, and being the penultimate stage of modern Per-

sian; the classical modern Persian of literature during the Mahometan period, from Firdausi and his immediate predecessors and contemporaries downwards; and, finally, that which has furnished philologists with fewer materials than any, the true living language of modern Iran. It must not be forgotten that Persian is spoken as a native and vernacular language much beyond the limits of the Persian Empire, in the settled parts of Turkistan and Afghanistan, far into the heart of the Chinese Empire, by a population whose Persian origin and agricultural habits are variously indicated in these countries respectively by the names Tājik, Sārt, Dihkān, and Pārsīvān. Besides these, the pastoral and nomadic tribes of mountaineers dwelling in the ranges which traverse and inclose the plains of Eastern Persia and Western Afghanistan, of whom the Eimāk[1] and Hazāra are the principal, are known to speak Persian as their own language. Their native traditions, whatever they may be worth, point to a Turanian rather than an Iranian origin, and one of the four clans of the Eimāk is actually called Moghul, and speaks a corrupt dialect of Mongol; but the other Eimāks, the Hazāra, and the settled Tājiks of the plains, all speak the Persian language in an archaic form, which may be generally described as being the Persian of Firdausi. But of the provincialisms, archaisms, and special differences of this Tājik or extra-Iranian Persian, there does not exist any notice whatever in detail, and it would be well worth the while of linguists and scholars in Persia, or the neighbouring countries, to endeavour to form a collection of the kind. One or two vocabularies of the Persian of Bokhara have been compiled and published, but as they were drawn up, not with the object of contrasting Tājik-Persian with Iranian-Persian, but

[1] Generally so pronounced, but written Ūimāk, اویماق. The word is Turkish, meaning a clan or tribe; چهار اویماق, "the four tribes," is the usual Persian name for this race. The word is lost in Osmanli, but survives among some Turkoman tribes of the interior of Asia Minor, by whom the main tribe is called *'ashīra*, and the next minor subdivision *oymak*. I am indebted for this information to Mr. Edmund Calvert, for a long time resident among the Turkomans of the neighbourhood of Kaisariya. A vocabulary of the dialect of the Moghul Eimaks drawn up up by Major Leach, has somehow given rise to the impression that the whole body of the four Eimaks speak Mongol, and are of Mongol descent; and they accordingly figure as Mongols in all modern works on language and ethnology. This is quite incorrect, and there is nothing whatever in Leach's words to warrant or give rise to such a supposition. Whatever their descent may be, their language, with the one exception of the Moghul Eimaks, is exclusively Tajik-Persian.

of showing that the language of Bokhara was Persian rather than something else, they have done more harm than good, as they have served to induce comparative philologists to accept and admit the "langue boukhare" into their essays and vocabularies as an independent dialect, having its own ordinal value, and standing towards Persian in the same relationship, more or less, as Kurdish or Ossetish. The "Fārsī" of Bokhara, in reality, differs from that of Tehran in the same manner and degree as the "Français" of Canada or the Mauritius differs from that of Paris, or the English of Boston from that of London. Each, in the ratio of its consciousness, accepts the metropolitan standard of literature and conversation, each considers itself, and really is, of the same name, form, and virtual identity, with the main branch from which it sprung, and though each may contain many curious provincialisms and archaic expressions, that circumstance of itself does not elevate them to the rank of separate substantial languages, or even dialects.

The dialects standing nearest to Persian, being its genuine sisters, and not modern offsets or corruptions of it, are the Mazanderani, Ghilek, and Talish, spoken in the wooded and mountainous country south of the Caspian. They are closely allied to each other, and form a natural family, which may be conveniently called the Caspian. They are known through some brief specimens of popular poetry published, with notes, by M. Chodzko; the Talish, moreover, through a grammar and vocabulary published at St. Petersburg; the province in which it is spoken being partly Russian. More remote from Persian than the Caspian group, and, respectively, about equidistant from it, stand the languages of the north-west and the south-east frontiers, the Beluchi and the numerous Kurdish dialects. The former, well illustrated in Germany from materials supplied by Major Leach's vocabulary, is unfortunately only known to us as spoken by the Rind Beluchis, the conquerors of Sindh, and it bears many traces of Indian influence accordingly. The dialect of the Nhārūi or western Beluchis, bordering on Kirman and Sistan, has not yet, to the writer's knowledge, been noticed. Regarding the various Kurdish dialects, it would be more convenient to call them by a less limited and more comprehensive term, such as Kurdo-Lurish or Lekī, as they are not only spoken in Kurdistan proper, including the area of Kurdish migration and settlement in Asia Minor and Northern Syria, and among the extensive settlements of true Kurds in Northern Khorasan, but by the Lurs and Bakhtyaris of Luristan, and by the whole of those Īliyāt, or wandering tribes of Persia, who are not

of Turkish race. These latter are called Lek in Persia, and of their distinctive dialect absolutely no record exists. The same may be said of the Luri, for though everybody who has been in the East and inquired into the subject is aware that the Lurs speak Kurdish, yet there is nothing to show in proof of the assertion save a few words in the Kurdish vocabularies in Mr. Rich's work on Kurdistan.

A very peculiar and insulated dialect must be classed in this stage or degree of proximity to Persian. This is the Baraki, spoken by a small hill-tribe in a secluded district of Afghanistan. Their tradition, pointing to a recent Arabian origin and to a language invented for purposes of secrecy by themselves, though accepted by its chronicler, Major Leach, is worthless in presence of the language itself, which is an interesting and in many points truly archaic Iranian dialect. *Kshār*, for instance, Persian *shahr*, old Persian *khshatram*, *ksha*, the number six, Zend *ksvas*, Persian *shash*, *shish*, which could not, of course, have been invented out of nothing, could not, any more, have been adopted from the local Tājik Persian of the plains, from which the old initial compound sound must have disappeared long prior to Islam. Leach only gives a vocabulary and dialogue, without any outline of the grammar, but the construction of sentences, as shown in the dialogue, is far less Iranian and more Turanian than would be expected from the wholly Iranian forms and words of this language.

Next come the two well known Ossetian dialects, which have now for some time attracted the attention of European scholars, owing to their outlying and insulated position in the Caucasus, and to their unexpected philological affinities. They have been fully illustrated by the labours of Rosen and Sjögren. The numerous Indian characteristics, and the strongly marked sound-system of the Pushtu, and the special and peculiar nature of much of its vocabulary, serve to remove it further from Persian than any of the dialects previously mentioned. Yet it does not close the list, and upon the whole, after due consideration, the extreme position among the Iranian dialects should probably be reserved for the Armenian; the affinities of which to Persian, nevertheless, are numerous, clear, and undoubted.

The above enumeration, it is believed, will be found to have comprised the whole circle of Iranian dialects that have come down to us, and that are, at present, known to exist. They are all of them closely connected with one another, and each one of them is capable of supplying great and effectual aid in throwing light upon the difficulties and explaining the peculiarities of any or all of the

others. Pushtu, obviously, and, as a matter of course, has to be illustrated by Persian, but the dialects are also capable of rendering it equally efficient services. Dr. Dorn has thus drawn useful comparisons from the Caspian dialects in two or three instances, and would have done so more fully had it been his object in that place to explain, rather than to state, the rules of Pushtu grammar. The principal end with which the Persian dialects have been examined in the preceding survey, has been to show how very scanty, after all, are the materials which lie at the disposal of the philologist for their due investigation, and to stimulate the linguist who may read these pages, and who may have opportunities for such researches, to dig and quarry in a valuable mine which, so far from having been exhausted, is as yet in many places unworked and undisturbed.

ART. VI.—*Glossary of Tibetan Geographical Terms.* Collected by HERMANN, ADOLPHE, and ROBERT DE SCHLAGINTWEIT, and edited by HERMANN DE SCHLAGINTWEIT, Ph. Dr., LL.D. Trin. Coll. Dubl., &c., &c.

I. *Materials and Method employed.*—II. *Alphabet and Signs.*—III. *Arrangement and General Abstract.*—IV. *Names Explained.*

I. MATERIALS AND METHOD EMPLOYED.

DURING our travels in India and High Asia, a careful collection of geographical names in the native spelling, and, if possible, with an interpretation added, became necessary for guiding us in transcribing those names in European characters. We soon observed that a considerable part of such information presented novel, unexpected, and well defined details, particularly for the countries beyond India. We directed our attention to it, therefore, with the greater zeal, as it gave us the idea of incorporating into our publications also a selection of geographical and ethnographical names.

In the collection of such materials we all three took an equal part: their elaboration became my share. From the glossary[1], which contains about 1,200 names explained, I select the Tibetan names only for the memoir now presented.

When travelling in Tíbet, we had to consult the natives, chiefly the Lamas, through the medium of our Hindustani interpreters, and we were particularly careful to get the respective names written down in native characters. Questions about the details of the meaning were readily understood and answered with decided intelligence; but occasionally, even the consultation of Csoma's and Schmidt's dictionaries, and all the varieties of the meaning of a word, which may be found there, proved an insufficient guide to finding a final interpretation for the spelling we had obtained. Here, as in our Hindustani materials, we limit our communications

[1] The geographical glossary from the languages of India and Tibet, with an essay on phonetic transcription and interpretation will form the second part of Vol. III. of our "Results of a Scientific Mission to India and High Asia." Leipzig, F. A. Brockhaus.

to those words only for which we found an explanation that appeared satisfactory; though the numerous geographical names for which we obtained the spelling only, as used in loco, was a material very welcome for our maps and measurements.

In the elaboration of the Indian materials I was assisted by our Munshi, Es-Seyyid Muhammad Sa'id; in that of the Tibetan by our brother Emil, who had made our materials and observations on Buddhism an object of his particular study, and also had occupied himself with various questions of Tibetan philology.[1] I mention, moreover, the important information we obtained for India in general from Colonel Sykes, and for Tibetan from Mr. Hodgson (whom I had the pleasure to find at Darjiling), and, after our return, from Professor Schiefner at St. Petersburgh. In reference to the questions of transcription in general, we owe various and important information to Professor Lepsius at Berlin. As some of the principal publications in reference to Tibetan, I quote:—Hodgson's papers on "Colonization," Calcutta Government Records, No. XXVII, 1857; Schiefner's Tibetanische Studien, in "Mélanges Asiatiques," St. Petersburgh, vol. i., pp. 324–94; Lepsius' "Uber die chinesischen und tibetanischen Lautverhältnisse," Berlin, 1861.

II. Alphabet and Signs used for the phonetic transcription.

The alphabet we used is that of Sir William Jones (generally adopted in England), with some of the modifications proposed later, particularly by Professor H. H. Wilson.[2] We added some signs, an explanation of which will follow, and besides, every word is provided with its phonetic accent.

Alphabet.—a (ā, ă, a̲, ã) ä, (ā̈); b (bh); ch; d (dh); e (ē, ĕ, ẽ); f; g (gh); h (''); i ī, ı̄); j (jh); k (kh), k̲h̲; l (lh); m; n; o (ō, ŏ), ö, (ō̈); p (ph); r (rh); s; sh; t (th); u (ū, ŭ), ü; v; y; z; zh.

Pronunciation.—*Vowels:* 1. a, e, i, o, u, as in German and Italian. 2. a̲ like the English a in wall. 3, ä, ö, ü, as in German. 4. Diphthongs give the sound of the two component vowels combined. 5. Diæresis is marked by the accent falling on the second of the two vowels.

[1] His work will appear nearly simultaneously with the third volume of our "Results of a Scientific Mission to India and High Asia," under the title: "Objects of Buddhist Worship to illustrate the Buddhism of Tibet."

[2] They are detailed in his "Glossary of Revenue Terms," London, 1855.

b. Consonants: 1. b, d, f, g, h, k, l, m, n, p, r, s, t, are pronounced as in English and German [the variations of g and h (in English) excepted]. 2. h, after a consonant, is an audible aspiration, except in ch, sh, and k̲h̲. 3. ch sounds as in English (*church*). 4. sh, as in English (*shade*), 5. k̲h̲ as ch in German (*hoch*). 6. j, as in English (*just*). 7. v, as the w in German (*Wasser*) being different from v in *very*, and w in *water*. 8. y as y in the English word *yes*, or j in the German *ja*. 9. z, soft, as in English. 10. zh, soft, as j in the French word *jour*.

In our *alphabetical registers* the letters follow the order of the alphabet, irrespective of the signs attached to them. This arrangement has the advantage of coinciding as nearly as possible with the system adopted in the dictionaries of European languages.

Modification of the letters and signs.—Vowels. - above a vowel makes the vowel long; ˘ indicates its imperfect formation; ˜ designates its nasal modification. *Consonants:* ' in detailed Tibetan transcription is used for the letter ʒ, since its nature does not much differ from the Greek spiritus lenis. ‘ is a mark of separation used to show s‘h to be an aspirated s, not sh. Italics are used in the Tibetan words when written in full detail, for representing consonants which are not pronounced. *Syllables in general:* – between two parts of a word shows them to form one word. It is particularly used in Tibetan terms; where, however, words combined by mere juxtaposition without forming a compound, are often met with; these have not the mark – between them.

Accents:—The sign ′ marks the syllable on which the phonetic accent falls, whether the syllable be long or short. In Tibetan no written accent exists; but in speaking, every polysyllabic word has its well-marked phonetic accent as in German, English, &c. We found its introduction facilitate considerably the understanding of native words when pronounced by a foreigner, and it did not in any degree interfere with our rendering the characters of the word.

In using these letters and signs, though not complete for Hindustani, all the elements representing the vowels and consonants existing in Tibetan can be reproduced, the distinctions in the Tibetan alphabet being altogether much less numerous. When in the seventh century A.D., the Tibetan alphabet was formed from the ancient Devanagari, many vocal and consonantal characters were omitted as not existing in Tibetan.

III.—Arrangement and General Abstract.

In this glossary the names are given first in their transcribed forms generally used by us or others. Inhabited places are not specially distinguished, but names of districts, peaks, mountains, passes, lakes, &c., are indicated as such. We next give the province in which the place is found, together with its degrees of latitude and longitude (details of geographical position, as well as heights are contained in our second volume "Hypsometry"). The spelling in the romanized transliteration of the Tibetan characters follows next. It will be seen that it was sometimes unavoidable to make a material difference between the phonetic transcriptions first given and these transliterations, the mute consonants, now distinguished by italics, causing in such cases the principal differences. Also the letters used as terminals often showed a decided difference between pronunciation and spelling. Amongst the limited number of letters which, according to Tibetan grammar, are allowed to be used as terminals, the mutes (*k*, *p*, and *t*) are not contained; but, though written as medials (*g*, *b*, and *d*), they are in many cases spoken as mutes. Previous travellers, Cunningham, the Stracheys, &c., who have been very careful in their orthography, show instances of such variations.

The *translation* of the name is followed by some explanatory remarks, including, if in reference to etymology, also the results obtained by previous researches. But, in the speciality of Tibetan geographical terminology I found, to my regret, existing literature of less assistance than I had expected. When two or more names co-exist for the same place, I have added them both, though, perhaps, we have been able to explain one only.

As a general abstract of the explanatory remarks referring to the formation of geographical names in Tibet, the following considerations may be presented in conclusion.

By far the greater number of geographical names are formed by composition. Descriptive delineation of physical or geographical features of the object is a type of names particularly frequent in Tibet. Epithets connected with Buddhist-Indian mythology, or the heroic period of Indian history, are also very numerous, especially with reference to religious settlements. Ancient Tibetan history and præ-Buddhist myths could not be traced, unless some

[1] As the romanized translation reproduces all the details of the original native characters, the Tibetan type is left out in this Journal, but it will be given in M. M. de Schlagintweit's third volume.

of the superstitious interpretations, such as Mórdo, "the oracle stones," may be quoted as an instance. Names which reveal no trace of compound formation in one or the other of the forms just alluded to, are comparatively rare; on the contrary, a combination of numerous words is frequently formed into one name which then assumes considerable length, as Gántug-súmgya-dúmdum, "the 370 children of the venerable," or Tsomote-shung, "the lake, the wild horse's drinking-place."

Hindu names in Tibet, which occur in native *Indian* maps, and also in European ones, are nearly always of foreign, plain Brahmanical origin; the inhabitants themselves having, in such cases, another Tibetan name. The double names of Gaurisánkar and Chingopãmari (compare also Chamalhári), and, with many others, the more generally known names of Mansaráur and Tso Máphan, may be alleged as analogous cases.

IV. Names Explained (in Alphabetical Order).

No. 1. *Bára Lácha*, properly *Bára Látse*, a pass leading from Lahól to Ladák, lat. 32°, long. 77°.—la-*r*tse, "the crest of the crossing roads."

Bára is the Lahól-Tibetan word for "the place where several roads cross each other (French, carrefour);" the name here refers to the roads to Shígri, Spíti, Kárdong, and Ladák, separating at this spot. In Tibetan proper, we could find no word like "Bára," neither in use amongst the natives, nor in the dictionaries.

Lácha seems to be used here as a dialectical substitution for "La-tse," the crest or top of a pass. By a few of the men we heard the name pronounced "Bára Látse," and those who could write invariably wrote it "Látse."

No. 2. *Bhután*, a native territory in the Eastern Himálaya, under the government of the Dhárma Rájah Láma.—Corr. Sanskrit; bhut, from the Tibetan root, phod. "End of Tibet."

Properly Bhot-ant; Bhot, "Tibet;" ánta, "end."

In this form, though more or less modified, the name has been received in Indian and European literature. The spelling is a modification of the Tibetan word phod, "to be able, to dare," which is the softer form. Bŏd is still in use amongst the natives for Tíbet proper (see Tíbet, No. 119). B. Hamilton, in his "Account of the Kingdom of Nepaul," p. 8, mentions the word Mádra as the name used in ancient Hindu writings for Bhután.

No. 3. *Brággo*, in Bálti, lat. 35°, long. 75°.—brag *s*go, "gate of the rocks."

Brag, "rock;" *s*go, "door, gate, entrance."

Rather more usual is the pronunciation of "br" as "d," as kept up in Mílum (in Kămáon), where the name for rock is "dag."—Compare Stégo (No. 102).

No. 4. *Brog*, in Bálti, lat. 35°, long. 73°.—'brog, "summer village."

Literally the meaning of the word is "wilderness," or "isolated house," in opposition to the villages permanently inhabited, and surrounded by cultivated grounds.

No. 5. *Chágzam*, in Gnári Khórsum, lat. 31°, long. 79°.—*l*chags zam, "iron bridge."

*L*chags, "iron;" zam, "bridge."

The Húnia name of the larger bridge near Thóling.

No. 6. *Chamalhári*, a peak in Bhután, lat. 27°, long. 89°.—jo-mo lha ri, "the mistress and the lord's mountain."

Jo-mo, "mistress, lady," is here equivalent to dólma (*s*grol-ma), in Sanskrit, "Tárā;" dialectically it is also pronounced chómo, or cháma; lha, "god, lord;" ri, "mountain."

It is most remarkable and characteristic that this sacred mountain, which is the highest in Bhután (attaining an elevation of 23,944 English feet), has a name of quite the same meaning as Gaurisánkar, the highest mountain in Nepál (attaining an elevation of 29,002 English feet), though they are more than two hundred miles distant from each other. I was the more surprised to find this coincidence, when working out the etymological remarks we had collected, since I obtained the explanation of Chamalhári in 1855 in Síkkim and Bhután, and that of Gaurisánkar in 1857 in Nepál, the recollection of the former having disappeared for the time from my memory after two years hard and various work.

Cháma corresponds here to "Gáuri," Lha to "Shíva, or Sánkar," but to the Bhútia name the word "mountain," ri, is still added.

The Lépcha name for Chamalhári has also the same meaning as the Tibetan name; it is: Rímiet-rim-sáchu, as told to me by Chhíbu Láma.

Jómo (Chómo, Cháma) not unfrequently occurs also in North-eastern Tíbet in names of mountains, as Chomogánkar, (jo-mo gangs *d*kar) "the mistress' white ice," or as a specimen of minor elevation Chomonágri (jo-mo nags ri) "the mistress' woody mour-

tain." These two examples were kindly communicated to me by Mr. A. Schiefner, of St. Petersburgh.

No. 7. *Chandunángi*, a mountain in Síkkim, lat. 27°, long. 88°.—*b*stan 'bru nang *r*gyas, "the powerful sunk by the esoteric symbol."

*B*stan, "strong, secure, firm, powerful;" 'bru, "a grain, a corn," or, "to pick, to dig, to vex;" nang, "intrinsic," or "esoteric, orthodox, a Buddhist, the morning;" *r*gya, "a seat, token, symbol;" s is the sign of the instrumental case.

Though Chhíbu Láma gave me the spelling written above as the only correct one, he at the same time told me a great variety of the meanings of its component parts, and the stories current about this mountain; he could neither find a proper reference of the words to the legends, nor a satisfactory explanation of the various elements. However, when after much hesitation on my part, I finally proposed to render the name as above, he coincided with me at last in considering this interpretation as quite congenial with Buddhist Himalayan terminology.

The pronunciation of the syllable "tsa" as "cha" we found very frequent in many Tibetan dialects.

No. 8. *Chom Lam*, in Bálti, lat. 35°, long. 76°.—chhom lam, "the robber's road."

Chhom, "a robber, plunderer;" lam, "a way, a road."

It is a halting-place between Búrze and the small lake Sar Séngri. The name refers to the circumstance of the road having frequently been taken in former times by plunderers for going to Shíngo.

Lam is found occasionally used in very unexpected combinations for geographical names. As an instance I mention Páksi lam nor, in Rúpchu, "Páksi has lost the way." Páksi is a proper name; nor "to err, to miss." This is the name of a very elevated pasture ground to the north of the Tsomoríri salt-lake, in lat. 32°, long. 78°.

No. 9. *Chóngsa*, or *Níti*, in Gărhwál, lat. 30°, long. 79.—*g*chong-sa, "land of narrow passages."

This is the Tibetan name in use for Níti, but we found it nowhere marked in the maps. The meaning of the name "*g*chong," or, if not abbreviated, "*g*chong-rong," a narrow passage, a defile; "sa," soil, land, can very well be referred to the deep erosions characteristic of this part of Tibet.

Adolphe also mentions having been once told that "chong" meant a "kind of grain;" but the Tibetan dictionaries give neither for "chong, jong, tsong, and dzong," nor for the corresponding aspirated words, meanings which could be referred to grain.

No. 10. *Chubrág*, in Pangkóng, lat. 34°, long. 78°,—chhu brag, "water (spring) rock."

Chhu, "water;" brag, "rock;" name of a hot spring a little above Pangpóche.

No. 11. *Chudángmo*, in Kămáon, lat. 30°, long. 80°,—chhu grang-mo, "the cold water."

Chhu, "water;" grang-mo, "cold;" name of a spring, north of Kyúngphur.—(See No. 47.)

No. 12. *Chuhárva*, a river in Gnári Khórsum, lat. 31°, long. 79°,—chhu nga-ro-va, "the roaring water."

Chuhárva is the dialectical form of the word given in the full transliteration, in which "chhu" is water, "nga-ro-va," an abbreviation of ngaro-chan-ba, "roaring;" but "chan," which means "full of, filled with," is often omitted. As an analogous case we may mention lan and lan-chan, "humid and full of humidity."

The name refers to a small glacier stream, a lateral affluent of the Mángnang river; its junction is near Mangyú. (See No. 60.)

No. 13. *Chúmig Márpo*, in Lahól, lat. 32°, long. 77°,—chhu-mig *d*mar-po, "the red spring."

Chhu-mig, "spring;" mar-po, "red." The name refers to deposits of oxide of iron.

Chúru, see *Tsomognalarí*. (No. 124.)

No. 14. *Churúlba*, in Gnári Khórsum, lat. 31°, long. 80°,—chhu rul-ba, "putrid water."

Chhu, "water;" rul-ba, "putrid." The Bhútias of Mílum call it "Mánipáni," in reference to the numerous chórtcus and their sacred inscriptions (om máni pádme hum) at the entrance of the valley.

No. 15. *Chúshul*, in Pangkóng, lat. 38°, long. 78°,—chhu-shul, "the water-tracks."

Chhu, "water;" shul, "track." A very characteristic name, referring to the empty river-beds, so very numerous in the environs of the Tsomognalarí salt-lake.

No. 16. *Dagkár*, a mountain in Rúpchu, lat. 33°, long. 78°,—brag *d*kar, "a white rock."

Brag, "a rock;" *d*kar, "white."

No. 17. *Dála*, a mountain south of Sámye, on the route from Tauóng to Lhássa,—brag la, "pass of rocks."

Brag, "rock;" la, "pass."

No. 18. *Dápsang*, a peak in Núbra, lat. 35°, long. 77°,—*br*da-bsang*s*. Literally, "the purified sign," which was explained to us to be the "brilliant, the sublime apparition;" viz., *br*da, "sign," or "signal;" bsang*s*, "purified."

It is by far the most prominent object on the Yárkand road, and, as the most recent surveys have shown, a rival in height to Kanchinjínga (see No. 39), and inferior in that respect only to Gaurisánkar. The Dápsang peak attains a height of 28,278 feet.

No. 19. *Darjíling*, in Síkkim, lat. 27°, long. 88°.—dar *r*gyas *g*ling, "the far-diffused island (of meditation)."

Dar, "diffused, propagated;" *r*gyas, "far, extensive, large;" *g*ling, "land, region;" equivalent to the Sanskrit dvīpa, "a continent surrounded by a circumambient ocean, an island."

I have followed in this interpretation the spelling used in religious books, though, to be complete, the word given above should be preceded by Sam (*b*sam), meaning "thought, meditation." Originally the name had decidedly been given to the Buddhist monastery erected there, and was transferred only later to the native settlement, and now even to the European sanitarium.

Another interpretation I had heard, was to connect it with Dórje (*r*dórje), as "place of the Dórje," the sceptre of Buddhist priesthood; but the Tibetan orthography does not agree with this translation. Though in Síkkim the Tibetan is not the native language, it is one of the consequences of the introduction of the Buddhist faith by Tibetan Lámas, that many of the principal places have Tibetan and not Lépcha names.

No. 20. *Digárchi*, the capital of the province Tsang, in Eastern Tíbet, lat. 29°, long. 89°.—*b*zhi ka *r*tse, "the four-housed (houses with gable ends)."

*B*zhi, four; ka is the article; *r*tse, "the upper part (of a house)." I have followed herein the interpretation of Mr. Hodgson ("Journ. As. Soc. Beng., vol. xxv., p. 504), who quotes the Nevári mode of spelling it zhi-ka-chhen as an instance more of the family identity

of Nevári and Tibetan. He remarks at the same time that the Tibetan "ka," the generic sign for houses, is represented in Nevári by kha, and "tsen" by chhen, though "kyim" be now the common form for house in written Tibetan. Compare also Tashilhúnpo, (No. 112.)

No. 21. *Dógsum*, in Bálti, lat. 35°, long. 75°.—grog *g*sum, "the three rivulets."

Grog, "rivulet;" *g*sum, "three." A little above the confluence of the two rivers a small "brog," or summer-village, is situated. It is characteristic of Tibetan geographical terminology, that the word *g*sum, "three," is very generally brought into connection with the confluence of two rivers, by which the third is considered to be formed as a new one. The Latin word "Trivium," for the junction of two roads is somewhat analogous. Compare also Súmdo (No. 103), and Súmgal (No. 104).

No. 22. *Dólong Kárpo*, in Bálti, lat. 34°, long. 76°.—*r*do *l*long *d*kar-po, "the bank of the white rocks."

*R*do, "stone;" *l*long, "a mass;" *d*kar-po, "white." It is a sandbank in the Hánu Lúngba river, covered with numerous blocks of white rock.

No. 23. *Drángkhar*, also pronounced *Dángkhar*, in Spíti, lat. 32°, long. 78°.—drang *m*khar, "steep (literally "straight") fort."

Drang, "upright, straight, vertical;" *m*khar, "fort."

No. 24. *Dúngnyi*, in Gărhwál, lat. 30°, long. 79°.—*g*dung *g*nyis, "the two families' settlements."

*G*nyis, "two;" *g*dung, "beam, timber, family." It is the Tibetan name of Mána, and refers, as we were told, to an original settlement of two houses or families. Now, the place is a large village; the highest in the Alaknánda valley.

No. 25. *Gántug Súmgya Dúnchu*, in Gărhwál, lat. 30°, long. 79°.—*r*gan phrug *g*sum *br*gya *b*dun-chu, "the 370 children of the venerable."

*R*gan, "old, aged, venerable;" phrug, "a child;" *g*sum, "three;" *br*gya, "hundred;" bdun-chu, "seventy." This is the name of the large Ibi Gámin glacier; it refers most probably to the very numerous ice-needles in the lower part of the glacier.

No. 26. *Gari*, frequently occurring in Tíbet.—gangs ri, "ice mountain."

Gangs, "ice, névé, frozen snow;" ri, "mountain." It is the general name for peaks reaching above the snow-limit. Snow, properly speaking, if fresh, or at least not yet granular and icy, is called "kha." Compare Khavachangyiyúl (No. 43).

No. 27. *Gártok*, or *Gar*, also *Gáro*, in Gnári Khórsum, lat. 31°, long. 80°.—sgar thog, or sgar, "the beginning (the most elevated) of camps;" or, "the camp."

Sgar, "a camp;" thog, "beginning." The most complete name, "Gártok," is that used by the Bhútia merchants, who come to this place in great numbers during the large autumnal fair in August; then tents in unexpected quantity are pitched here for a short time, as the place can show but few stone houses, and even these are not permanently inhabited throughout the year. Moorcroft calls Gártok "Gártop;" Gerard, "Gertope;" but Strachey mentions the proper name, "Gar." Compare also Phánde khangsar (No. 76).

No. 28. *Gnári Khórsum*, a province in the central parts of Tíbet.—mnga'-ris skor gsum, "the three dependent provinces."

Mgna'-ris, "dependent;" skor, "circle, province;" gsum, "three." This interpretation alone agrees with the native spelling invariably written for us. The name "dependency" was referred to its political relation towards China; the pronunciation we generally found to be Gnári in accordance with our usual mode of writing it. "Gnári" is also found in the village name Gnári Lu, in Bálti, lat. 35°, long. 76°.

No. 29. *Grámpa*, in Bálti, lat. 35°, long. 75°.—gram-pa, "a swamp."

This is the name of swampy meadows, a little above the village of Shígar.

No. 30. *Gúrla*, a peak in Gnári Khórsum, lat. 30°, long. 81°.—gur la, "the tent-shaped pass."

Gur, "tent;" la, "passage." It is a name sometimes given to mountains which show a longitudinal, tent-like crest with a depression in it. The circumstance that the depression of the crest is very essential for completing the conformity with the Tibetan tent, also explains that we find this name connected with

peaks exceeding 20,000 feet, and, therefore, considerably above the general height of passes, even in the most elevated parts of Tibet. Comp. Riba, No. 84.

No. 31. *Gyagár*, in Ladák, lat. 34°, long. 77°.—*r*gya gar, "the white plain."

*R*gya, "extent;" gar (equal to *d*kar), "white." The name of a sandy plain on the left shore of the Indus river, near the monastery of Hímis. In Tibetan literature it is also the name used for India, as gyánag (*r*gya-nag), "black region," is used for China. Concerning these names and the reference of colours to the *dress* of the people (not to their complexion), compare the interesting remarks of Mr. B. H. Hodgson, in his "Himalaya and Nepal," Calcutta, 1857, Govt. Selections, xxvii, p. 82.

No. 32. *Gyúgti*, a river in Gnári Khórsum, lat. 32°, long. 80°.—*r*gyug-*r*ta.

*R*gyug, "to run, fly;" *r*ta, "a horse," seems to have undergone here only a dialectical modification into "ti."

The name is given by the natives in connection with the horse-races held every year at the time of the Gártok fair. The race takes place between the Mákyu and Gyúgti rivers; prizes are distributed by the Khárpon (*m*Khar-*d*pon) or head man of the place. The first prize consists in a horse and a dress; the second in a box of tea; the third in a present of five rupis and a silk-cloth. The latter object, the kadák, is very generally presented to superiors as a sign of respect and acknowledgment; we also received kadáks on many occasions in Tibet.

The word "Gyúgti" is also met with in the name "Gyúgti La," a pass north of Gártok.

No. 33. *Hímbab*, a river in Dras.—him babs, "snow-descended, having its origin in the snowy regions."

Him, "frozen snow, ice, snow;" babs, "the præterite of 'bab-pa, 'descended.'" The same name is also given to the province of Dras, which is another instance, well defined by the meaning of the word, of the fact, that, if names of towns or provinces are identical with those of rivers, the latter are most probably the older and the original names.

Hímis, see *Sangye chi ku sung thug chi ten* (*No.* 91.)

No. 34. *Ĭbi Gámin*, or *Ábi Gámin*, a peak in Gărhwál Gnári Khórsum, lat. 30°, long. 79°.—a-phi gangs *s*min, "grand-mother of the perfect snowy range."

A-phi, or, here dialectically ĭbi, "grandmother;" gangs, "ice, glacier;" *s*min, "perfect." This peak (height 25,500 feet) belongs to the Himálaya; but its slopes offer a most surprising view of the snowy peaks of the Kailás range. To the Bádrinath Bráhman, we found the mountain is known under the name of Nánda Părbát, "mountain of the goddess Nánda."

On the maps, we frequently see for it the name Kámet, copied originally from Strachey's map. We could not, however, discover a knowledge of this name among the natives.

The word *s*min also signifies "eye-brow," and would allow the name Ĭbi Gámin to be translated by "grand-mother with icy eye-brows;" but our native companions decidedly explained *s*min in this case by "perfect," in which sense we also meet in Min-dum (*s*min *b*dum), the constellation of Ursa Major = the seven perfect ones (stars).

It is also worthy of notice, that this is one of the few geographical names in Tibet, which begin with a vowel.

No. 35. *Jángla*, near Tángtse, in Ladák, lat. 34°, long. 77°.—byang la, "north pass."

Byang, here pronounced jang, "north;" la, "pass."

No. 36. *Jánglung*, in Ladák, lat. 34°, long. 78°.—*l*jang lung, "the green valley."

*L*jang, "green;" lung, "valley."

No. 37. *Jángthang*, a province in Gnári Khórsum. *l*jang thang, "green plain."

*L*jang, "green;" thang, "plain, meadow."

It is so called on account of its being visited by shepherds only, and scarcely at all cultivated. An anologous name is Rung-thang, the name for cultivated plains in general; rung, "useful."

No. 38. *Kámzam*, or *Kángdsang*, in Gnári Khórsum, lat. 31°, long. 79°.—*s*kam zam, "the dry bridge."

*S*kam, "dry;" zam, "bridge." It is the name of a small bridge on the road from Thóling to Chábrang, leading over a deep, but narrow erosion.

No. 39. *Kanchinjínga*, the highest peak (28,156 feet) in Síkkim, lat. 27°, long. 88°.—gangs chhen *m*dzod *l*nga, "the five treasures (jewels) of the high snow."

Gangs (gã), in this part of the Himálaya generally pronounced kang, "snow, ice;" chhen, "great;" *m*dzod, "treasure;" *l*nga, "five."

The name, it was told me by Chhíbu Láma, might be referred to five of the principal snow-filled valleys (cirques de névé) surrounding the crest of Kanchinjínga. The Lépchas have a name for it; this, however, by its perfect identity of meaning, seems to have been merely transferred from the Tibetan into the Lépcha language; it perfectly corroborates the interpretation I have adopted. The Lépcha name for Kanchinjínga is "Chu-thíngbo-jet-púngo;" occasionally also the first part alone of the name, "Chu-thing," is frequently used.

Kárchan, see *Lahól*. (No. 51.)

No. 40. *Kárdong*, in Lahól, lat. 33°, long. 77°.—*d*kar dong, "white hollow (cirque de névé)."

*D*kar, "white;" dong, "cavern, profundity, abyss, pit."—The name evidently refers to the extent of snowy regions in this district.

No. 41. *Kháche*, the Tibetan name of Kashmír.—Kha chhe, "the large mouth."

Kha, "mouth;" chhe, "large, great."—The name refers to the central, lacustrine plain of Kashmír, in which Srinágar, the capital, is situated; it extends from Islámábád to Baramúla. The drainage of the lake formerly covering this plain, is the immediate consequence of the gradual progress of the erosion of the Jhílum river. In Hindu mythology it is considered to be the work of the saint Kasyápa (see Wilson, in "Asiatic Researches," vol. xv, p. 9). But notwithstanding this interpretation being given very generally by the natives to kháche, it is not impossible that it was only a subsequent meaning given to the name, and that it must be considered originally to be only a mutilation of the Sanskrit kasmíra. For the various interpretations of Kashmír, see Thornton's "Gazeteer of the Countries adjacent to India."

No. 42. *Khárgyil*, in Dras, lat. 34°, long. 76°.—*m*khar *d*kyil, "the fort in the centre," or literally, "the fort's centre."

*M*khar, "fort;" *d*kyil, "the centre."

No. 43. *Khavachangyiyúl*, one of the names of Tíbet.—Kha-va-chan gyi yul, "the land full of snow."

Khava, "snow;" chan, adjective termination, "full;" gyi, the genitive case, signifying "of;" yul, "land."—This is the explanation received from a Láma in the monastery of Láma Yúra. We cannot decide whether the term is in use as a geographical name, but it is frequently found in Buddhist legends.

No. 44. *Khyagtód*, or *Káktet*, in Pangkóng, lat. 33°, long. 78°.—'Khyags stod, "the frozen upper settlement."

'Khyags, "frozen;" stod, "the upper part."—The name is referable to the great elevation and low temperature of the site.

No. 45. *Khyírong*, a valley in Eastern Tíbet.—Khyi rong, "the dog's passage."

Khyi, "dog;" rong, "defile, passage." It is the name of a valley in Tíbet to the north of Nepál, as communicated to us by a Pándit of Jhang Bahádur.

No. 46. *Kyangchu*, in Rúpchu, lat. 33°, long. 77°.—rkyang chhu, "Kyang's (wild horse's) water."

Rkyang, "the wild horse, equus hemionus;" chhu, "water."

No. 47. *Kyúngphur*, or *Kyúngar*, in Kămáon, lat. 30°, long. 80°.—sKyung 'phur, "the flying crow."

Skyúng, "a crow, jack-daw;" 'phur, "to fly." In the Kămáon dialect, the name has been changed into Kyúngar.

Crows are very numerous in this part of the Himálaya, even in the ice-regions of the greatest elevation. Some of the species of corvus thibetanus (Hodgs.) accompanied us during our ascent of the Ibi Gămin peak, up to our highest encampment at 19,326 feet.

No. 48. *Lábcha*, a mountain in Spíti, lat. 32°, long. 78°.—lab-tse, "a heap."

Lábcha, or Lápcha, is a name given to the stone-heaps erected by the natives on various occasions for religious purposes in large numbers all over Tíbet. Conspicuous points, particularly summits of mountains, are selected with predilection, and generally poles with rags or pieces of cloth with religious prints on them, are fixed in the Lábchas. These flags, which are believed to keep off the evil spirits, are called Dérchoks.

The word Lábcha is not met with in classical Tibetan literature, and presents itself, as we think after a careful examination of all

circumstances, as a modification of the original word Lábtse, "a heap;" which, however, still occurs, in compound geographical names, as in Lábtse Nágu and Lábtse Chu, in Gnári Khórsum.

No. 49. *Lámlung*, in Kămáon, lat. 30°, long. 79°.—lam lung, "the valley of the road."

Lam, "road;" lung, "valley." It is a halting place north of Mílum.

No. 50. *Lángchen Khabáb*, also Lángchen Khabáp, the Sátlej river. —*g*lang-chhen kha bab.—"Descended from the mouth of an elephant."

*G*lang-chen, "elephant;" kha, "mouth;" bab is the præterite of 'bab-po, "descended." This is one of the names of the Sátlej river, connected with Hindu mythology. See also Wilford, in "Asiatic Researches," vol. viii, p. 318.

No. 51. *Lahŏl*, alias *Lahoul*, or *Lahul*, a province in the Western Himálaya, derived from—lho yul, "the southern province."

Lho, "the south;" yul, "land, country." In this case, the name is referred to its position compared with Ladák. Another name for Lahól, which is chiefly used by the Ladákis, is Kárchan; its component parts, *d*har, "white;" chan, "full;" refers to the numerous glaciers and snow-fields. The Lahŏlis themselves call their province Sóngla.

No. 52. *Lang Tso*, a lake in Zánkhar, lat. 33°, long. 78°.—*g*lang *m*ts'ho, "Bullock lake."

*G*lang, "bullock;" *m*ts'ho, "lake."

Lha dan, see *Lhássa*.

No. 53. *Lhádung*, on the road to Lhássa, in Eastern Tíbet, lat. 29°, long. 92°.—lha dung, "the god's conch-trumpet."

Lha, "god;" dung, "a tortoise-shell, a trumpet, a conch." The word "dung" is frequently met with in Eastern Tíbet as a component part in names of Láma settlements. It is the name of the shell they use in their religious ceremonies.

No. 54. *Lhássa*, the capital of Eastern Tíbet, lat. 29°, long. 92°.—lha sa, "the land of gods."

Lha, "God;" sa, "land." Vigne, in his "Travels in Kashmír," vol. ii., p. 249, gives for it the name of Yul-sung; yul, "land;" *g*sung, "order, command;" which may possibly be locally used,

as its meaning can also be referred to the clerical authority of the Dalái Láma. Lha-*l*dan, "provided with gods," is mentioned as its ancient name by Schmidt, "Tibet." Wörterbuch, p. 626.

No. 55. *Lházab Chu*, a spring in Gnári Khórsum, lat. 31°, long. 79°.—lha zab chhu, "the deep water of the gods."

Lha, "god;" zab, "deep;" chu, "water." This is the name of a sacred spring on the road from Púling to the Lábtse Nágu pass; the spring is the more venerated as no other water is procurable within a great distance.

No. 56. *Lhóu*, a station four days' march south of Tauóng, in Bhután, lat. 22°, long. 92.—lhou, "the south."

Lho, "south;" u, "a kind of definite article." The name was connected by the natives with the beginning of a general drainage of the country to the south.

No. 57. *Lúngmar*, a river in Pangkóng, lat. 34°, long. 79°.—*k*lung *d*mar, "the red river" or "red river bed."

*K*lung, "river," or here "river bed." The river has no water, being above the present level of the salt lake Tsomognalarí.

No. 58. *Mácha Khabáb*, also *Mápcha Khabáb*, a river in Nepál.—*r*ma-bya kha bab, "flowing out from the mouth of a peacock."

*R*ma-bya, "peacock;" kha, "mouth;" bab is the præterite of 'bab-po, "descended." It is a Buddhist name of the Karnáli river, without any direct connection with the character of the country.

No. 59. *Máhe Súmdo*, in Kămáon, lat. 30°, long. 79°.—ma-he *g*sum *m*do, "the Mahe's Trivium."

Ma-he, "a kind of buffalo;" *g*sum, "three;" *m*do, "place." This is the name of the confluence of the Loóka and Gírthi rivers; Máhe, we were told, is the name of a species of wild animals (which come frequently here to drink); but we could not get it properly described. The dictionaries translate it as a kind of buffalo.

No. 60. *Mangyú*, in Gnári Khórsum, lat. 31°, long. 79°.—*s*mang gyi yul, "a place containing medicines (medicinal plants)."

*S*man, "medicine;" gyi is the sign of the genitive; yul, "land," the l being here suppressed in the pronunciation.

Adolphe's companions, though they knew the signification of the name, could not tell anything about particular medicinal plants being found there.

Márpo Lúngba, see *Marporí*.

No. 61. *Marporí*, in Bálti, lat. 35°, long. 75°.—*d*mar-po ri, "the red mountain."

*D*mar-po, "the red;" ri, "a mountain."

The name refers to the frequent occurrence of reddish rocks. In reference to the occurrence of the same name, I mention Marporí, or Marborí, near Lhássa, with the large monastery Potála, the residence of the Dalái Láma, and Márpo Lúngba (*d*mar-po *k*lung-ba), "the red river," in Bálti.

No. 62. *Mártholi*, in Kămáon, lat. 30°, long. 79°.—mar *m*tho ling, "the Lower Thóling."

Mar, "low;" *m*tho, "high, elevated;" ling, or more correctly lding, "to float, fly. See also Thóling (No. 117). The Húnias call this village Námla.

No. 63. *Maryúl*, the western, low provinces of Tíbet.—mar yul, "the low country."

It is one of the Láma names (also occasionally used in classical writings) for Ladák and Bálti, but we could not find it used by the natives.

No. 64. *Migmetkhár*, in Bálti, lat. 35°, long. 75°.—mig med *m*khar, "the invisible fort."

Mig, "eye;" med, "a particle forming negative adjectives;" *m*khar "fort."

No. 65. *Mílum*, or *Mídum*, in Kămáon, lat. 30°, long. 79°.—mi *b*zlum, "Man's union (congregation, colony)."

Mi, "man;" *b*zlum, "to gather." The name can be explained by the place being a colony of Tibetans, on the southern slope of the Himálayan crest. It is pronounced Mílum, and also Mídum; both expressions can be brought into connection with the orthography, for in "zlum" the "zl" is generally spoken as "d," whilst in the pronunciation of "lum," the soft "s" is phonetically dropped. In loco, we had it also translated as "Man's exhaustion," which leads us to *r*dum, "mutilated;" this interpretation, we were told, alludes to the hardships and the exhaustion of the first settlers when they had reached this spot after having crossed high and difficult passes.

No. 66. *Mínchu*, in Síkkim, lat. 27°, long. 88°.—smin chhu, "the perfect water."

*S*min, "perfect;" chhu, "water." Originally the name of a spring, now of a small village near it.

No. 67. *Mórdo*, in Rúpchu, lat. 33°, long. 78°.—mo rdo, "the oracle stones."

Mo, "oracle;" rdo, "stone." It is a halting place near the ridge of a pass, the slopes of which are covered with stones of a dark and a light colour. They are thrown into the air; a black stone falling down to the earth as the first is a bad omen. There is even a legend, that Alexander the Great, whose memory is preserved and alluded to (more generally than might be expected) in Tíbet and Turkistán, here consulted the stone oracle, in order to decide whether or not to proceed to Ladák; "but with a negative result," my Láma companion added, most earnestly. Alexander's name in Tíbet is Gyálpo Kýshar.

No. 68. *Pádun*, also found spelt *Pádum*, in Zánkhar, lat. 33°, long. 78°.—*d*pa' *b*dun, "the seven champions."

*D*pa', "a champion, hero;" *b*dun, "seven." Referred by the nhabitants to a legend in connection with the foundation and former importance of Pádun. The term champion was taken, by our Láma informants at least, as champion of the faith.

No. 69. *Pang*, frequent in Western Tíbet.—*s*pang, "a grassy place."

Often used for shepherds' halting-places, and particularly frequent in compound geographical names.

No. 70. *Panggúr* (Pángar), in Rúpchu, lat. 33°, long. 78°.—*s*pang *d*gur, "the verdure-curve."

*S*pang, "verdure;" *d*gur, "crookedness, curve." It is a place below the salt lake Tso Rul, with a somewhat better vegetation than is to be found in the environs.

Panggyé, see *Pangrínpo*.

No. 71. *Pangkóng*, a province in Western Tíbet.—*d*pangs kong, "the heights and depressions."

*D*pangs, "the height;" kong, "concave, not plain, concavity." The numerous valleys and ridges are characterized by this name. My informants referred the name most positively to the province in general (see Tsomognalarí, No. 124), though sometimes also the salt lake Tsomognalarí was called Tso Pangkóng, particularly by native travellers, who were not inhabitants of this province.

No. 72. *Pangmíg*, or *Panamík*, in Pangkóng, lat. 33° long. 78°.—*s*pang mig, "a meadow-eye."

*S*pang, "grassy place;" mig, "eye." I first met this name,

used for a small grassy place on the left shore of the salt-lake Tsomognalarí, which, on account of its shape, might be compared to an eye, but rather of the Tibetan elongated form; I afterwards found the name repeated in many other parts of Tíbet, for instance in Núbra, and not far from Leh; it generally was connected with the existence of an isolated grassy spot.

No. 73. *Pangpoché*, in Núbra, lat. 34°, long. 78°.—*s*pang-po chhe, "the great grassy place."

*S*pang-po, "the grassy place;" chhe, "great."

No. 74. *Pangríngpo*, in Rúpchu, lat. 33°, long. 78°.—*s*pang ring-po, "the long meadow."

*S*pang, "meadow;" ring-po, "long." A grassy valley in the Pangkóng district. An analogous name is: Panggyé (*s*pang-*r*gya*s*), "the broad valley," a name met with in Rúpchu, and also in the Pangkóng district. Namaríngpo and Namagyá are used in the same sense; Náma, signifying a peculiar kind of grassy places, is a name very often used for halting-places all over Tíbet.

Páksi Lámnor, see *Chom Lam* (No. 8).

No. 75. *Péntse La*, a pass leading from Zánkhar to Dras, lat. 33°, long. 76°.—*d*pen *r*tse la, "the pass with the beautiful top."

*D*pen, "beautiful;" *r*tse, "the top or point of anything;" la, "pass." The name has been decidedly given in consequence of the easy access and gradual ascent of the road.

No. 76. *Phánde Kháng*sar, also *Phúnde Kháng*sar, in Gnári Khórsum.—phan *b*de khang sar, "the new house of blessing and welfare."

Phan, "usefulness," in the sense of being a blessing; *b*de, "welfare, the state of being well;" khang, "a house;" sar, "new." This is a name given to the few solid houses at Gártok (*see* No, 27). The euphemistic name is to be taken in the sense of an option, since, in consequence of its very great elevation (15,090 feet), the climate is particularly rough, and the place is dreaded by the Chinese superintendents who have to pass the summer there.

No. 77. *Phyichú*, in Rúpchu, lat. 33°, long. 78°.—phyi chhu, "the marmot-rivulet (Arctomys Bobac).

Phyi, "the native name for Arctomys Bobac;" chhu, "water." A place frequented by marmots for the purpose of drinking.

No. 78. *Pímo La*, in Lahól, lat. 32°, long. 77°.—pi-mu la, "the knee pass."

Pi-mu, "the knee;" la, "pass." A name also met with in the European Alps, *e.g.*, near the Eibsee, in Bavaria.

Schröter's dictionary, p. 181, has "pi-mu" for knee; Csoma and Schmidt have pis-mu, which Mr. Schiefner tells me is the ancient word for knee.

No. 79. *Pói Lábtse*, a mountain in Gnári Khórsum, lat. 31°, long. 80°.—*s*po'i lab-tse, "the heaps of the summit."

*S*po, "summit;" i is the genitive; lábtse, "a heap." By this rather curious name allusion is made to three rounded prominences on the crest of this mountain (of very moderate elevation). The middle of these prominences is called Kárpo, "the white;" the southern, Márpo, "the red;" and the northern Nágpo, "the black;" they are considered the seats of three goddesses. The mountain is situated in the outer chains of the Trans-Sátlej range.

No. 80. *Porgyál*, peaks in the north-western Himálaya, lat. 31°, long. 78°.—*s*por *r*gyal, "the lofty twins."

*S*por, "a raising, promoting, advancing;" *r*gyal, "name of a constellation of two stars, analogous to the Gemini." Cunningham, in his "Ladák," p. 62, whose explanation I follow, connects this name with the double-peaked appearance of this mountain. The fundamental meaning of the word *r*gyal is "victorious."

No. 81. *Púndun*, in Pangkóng, lat. 33°, long. 78°.—*s*pun *b*dun, "the seven brothers."

*S*pun, "brother;" *b*dun, "seven." A group of seven glaciers, which we also heard named Mánmo púndun.

No. 82. *Pusetháng*, in Gnári Khórsum, lat. 31°, long. 80°.—*s*pu-chhen thang, "the plain or meadow of the puses."

Puse is a kind of mole; thang, "a plain, a meadow." Numerous hills are thrown up in this place, and are rather surprising in so great an elevation, where vegetation of any kind is so scarce. In the dictionaries, we looked in vain for puse, but Mr. Schiefner, whom we consulted about it, kindly informed us, that it might be corrupted from *s*pu-chhen, "long-haired," *s*pu meaning "hair," chhen, "great." For a short-haired animal of this kind might then be expected *s*pu-*h*rug, pronounced pu-shuk.

No. 83. *Réru*, in Zánkhar, lat. 33°, long. 77°.—"the horn (river bend)."

It will be a dialectical form of ra ru, or ra'i ru, "a goat's horn,"

and I consider the name to have originated from a curvature in the Zánkhar river near the village.

No. 84. *Ríba*, a mountain in Bálti, lat. 35°, long. 75°.—a dialectical form of ru-ba, "tent of woven cloth."

Ru-ba, here pronounced riba, "coarse tent of sack-cloth." A snow-peak of tent-like form in the environs of the Mustágh pass. Ríba is the name for the Bálti tent; the ordinary Tibetan felt tent is called Gur. (Comp. Gúrla, No. 30.)

No. 85. *Rigyál*, in Western Tíbet.—ri *r*gyal, "mountain king."

Ri, "mountain," *r*gyál, or if not abbreviated, *r*gyálpo, "king, sovereign." One of the names of the Kailás range, mentioned in Cunningham's "Ladák," p. 43.

No. 86. *Ríngmo*, used in composition.—ring-mo, "the long . . ."

Ring, "long;" mo is the article. We found it often used in Bálti, in compositions of mountain names. As an instance, we name Ríngmo chor, lat. 35°, long. 75°, in the Stirikúshu valley.

No. 87. *Róngchung*, in Ladák, lat. 34°, long. 77°.—rong chhung, "a short narrow defile."

Rong, "a narrow passage;" chhung, "small."

No. 88. *Róngdo*, in Bálti, lat. 35°, long. 75°.—rong *m*do, "a district of defiles."

Rong, "a narrow passage, a defile;" *m*do, "a district, lower part of a country." Another name also used for it is Rongyúl, or dialectically Royul, yul being "land."

No. 89. *Samgáun*, properly *Sem-gya-nom*, in Kămáon, lat. 30°, long. 79°.—sems gya-nom, "a mind of joy and content."

Sems, "spirit, mind;" gya-nom, "joy, contentment." The name refers to the luxuriant vegetation of grass, a most pleasant sight for every one coming from Tíbet.

No. 90. *Samyé*, in Eastern Tíbet, lat. 29°, long. 92°.—*b*sam yas, "the thought from above."

*B*sam, "thought, thinking;" yas, "the upper, from above." Here stands the far known temple Bíma, which is described by Ssanang Ssetsen (Geschrifte der Ostmongolen, ed. by I. I. Schmidt, St. Petersburg, 1829, p. 41) as a wonder of architecture. The temple was built by the King Thísrong de tsan, as early as 811 A.D.

According to a note of Klaproth to the "Chinese description of Tibet" ("Nouveau Journal Asiatique," vol. iv, p. 281), the Chinese call it Sang yuan.

No. 91. *Sang gye chi ku sung thug chi ten*, the Láma name of the monastery Hímis, in Ladák, lat. 34°, long. 77°.—sangs-*r*gyas kyi *s*ku *g*sung thugs kyi *r*ten, "the support of the meaning of the Buddha's precepts."

Sang-*r*gyas, "a Buddha;" kyi is the sign of the genitive; sku, "a body, a person;" *g*sung, "the precept;" thugs, "heart, mind;" *r*ten, "a support."

We met this name in the historical document relating to the foundation of the monastery of Hímis, and is used there as its clerical name. For a view of this large monastery see Plate No. 16 of our "Atlas of Panoramas and Views of India and High Asia." Its erection took from the year 1644 A.D. to 1672. For details, see the abbreviated translation of the foundation-document in Emil Schlagintweit's "Objects of Buddhist Worship," part ii, chapter i.

The name here analysed alludes (as is general with one of the names of each Buddhist monastery) to its being a centre of the Buddhist faith. (Compare Darjíling, No. 19.) Another instance is Míndoling (*s*mingrol *g*ling), "the place of perfection and emancipation," mentioned as a name of a monastery in the dictionaries.

No. 92. *Sénge khabáb river.*—seng-ge kha bab, "descended from the mouth of a lion."

Seng-ge, "lion;" kha, "mouth;" bab is the præterite of 'bab-po, "descended." A mythological name of the river Indus.

No. 93. *Séngchong*, a small fort in Bhuṭán, lat. 27°, long. 92°.—seng-ge *r*dzong, "lion fort."

Seng-ge, "lion;" *r*dzong, "fort." The epithet "lion," has here the meaning of strength; also in the composition of personal names this word is very often used in that sense.

No. 94. *Shálong*, in Kămáon, lat. 30°, long. 80°.—sha *s*long, "the place where the deer rise."

Sha, "deer;" *s*long, "rise." Fine meadows, a likely place for deer, though they are now said to be scarcely ever seen there.

No. 95. *Shángshung*, a district in Gnári Khórsum.—zhang zhung.

This is an ancient name of the district of Gúge. If we are allowed to view Shángshung as a phonetic modification of zhong

zhong, which is translated in Schmidt's dictionary, p. 494, by "excavated, uneven," it might be connected with the deep cuttings and erosions of the rivers, and translated by "eroded country."

No. 96. *Shárba Tso*, a lake in Bálti, lat. 35°, long. 76°.—zhar-ba *m*ts'ho, "the blind lake."

Zhar-ba, "blind;" *m*ts'ho, "lake."—The blindness is referred to the form of an eye sunk in and blind; the depression of the lake, and its difference from its former level is here significantly alluded to.

No. 97. *Shing*.—shing, "wood, tree."

It not unfrequently forms a part of geographical names, as Múrshing, in Bhután, Mur, "upper limit," probably referring to a particular kind of trees being no more cultivated here. Also Shing-yál, "the king of the trees," is occasionally found connected with localities, where isolated trees of unusual height occur.

No. 98. *Shingrúl*, in Pangkóng, lat. 33°, long. 78°.—zhing rul, "the putrid, marshy ground."

Zhing, "ground;" rul, "rotten, putrid." A salt lake, almost entirely dried up.

No. 99. *Síngrul*, in Ladák, lat. 34°, long. 77°.—*g*sing rul, "The putrid moor."

*G*sing, "a place covered with small green grass, a moor;" rul, "putrid, rotten."—The name refers to a swampy ground near the village, where formerly a lake was.

No. 100. *Sínka Tong*, in Kămáon, lat. 30°, long. 80°.—*s*tong, "the thousand Sinkas, or gods."

Sínka, name of a divinity; *s*tong, "thousand."

No. 101. *Skárdo*, in Bálti, lat. 35°, long. 75°. *s*kar *m*do, "the separated country or valley."

*S*kar, "to separate;" *m*do, "district, lower district." The name is perhaps referable to the country being cut up by deep valleys and ravines. "*S*kar," might be also "star;" and Cunningham, in his "Ladák," p. 34, translates it "starry place." The pronunciation Kárdo, without showing the s prefixed, would be more usual according to the general rules, but now Skárdŏ is more frequently heard. In the actual Hindustáni an "I" is added as usual before S, if followed by a consonant. With an "E" prefixed, it also occurs in Tibetan literature, as quoted to us by Mr. Schiefner from a Tibetan work on the history of Buddhism.

No. 102. *Sté-go*, in Bálti, lat. 35°, long. 73°.—sgo, "the gate of Ste."

The name of a small fort opposite the village Ste Ste, situated above the narrow defile, through which the road leads to Āskoli. The name "gate" is to be taken literally, since a gate exists, to close the defile.

No. 103. *Súmdo*, in Zánkhar, lat. 33°, long. 77°.—*g*sum *m*do, "the place where three (ways, or rivers) meet."

*G*sum, "three;" *m*do, "a particle used in compound words." It is a name very frequent in Tíbet, and is referred to the meeting of three roads, generally coinciding with the confluence of two rivers. The Gărhváli word "Hámdo," for the same object, appears to be but a corruption of Súmdo. Compare Dógsum (No. 21).

No. 104. *Súmgal*, in Turkistán, lat. 33°, long. 78°.—*g*sum *r*gal, "the three fords."

*G*sum, "three;" *r*gal, "ford." Here also the existence of three fords, two above and one below the junction, can be very well connected with the confluence of two rivers.

No. 105. *Sumzámba*, in Gărhvál, lat. 30°, long. 79°.—*g*sum zam-ba, "bridge over the three (trium pons)."

There is only one bridge here over the Vishnugánga, below the junction.

No. 106. *Sursérko*, sometimes *Sunsárka*, in Gnári Khórsum, lat. 31°, long. 80°.—*g*ser *br*ko, "place where gold was dug."

*G*ser, "gold;" *br*ko, "dig." "Sur" is the Gărhváli word for gold, here repeated, though already contained in the Tibetan word. The word is composed of pure Tibetan and Gărhváli, and refers to a tradition that gold-diggings had formerly been there.

No. 107. *Tachóg khabáb*, a river in Eastern Tíbet.—*r*ta *m*chhog kha bab, "descended from the mouth of the best horse."

*R*ta, "horse;" *m*chhog, "the best in its kind;" kha, "mouth;" bab is the præterite of 'bab-po "descended."—One of the mythological names of the Dihóng. See also Tsangbochú, No. 121.

No 108. *Tagnág*, a pasture-ground in Ladák, lat. 34°, long. 77°.—brag nag, "a black rock (or rocky mountain)."

Brag sounds like tag, "a rock;" nag, "black." Nags would have the same sound and would mean forest; but the place in

question is considerably above the limit of forests, and, besides, we only had it translated to us by black.

No. 109. *Tálong*, in Bhután, lat. 27°, long. 92°.—*r*ta long, "opportunity for horses."

*R*ta "horse;" long, or long-ba, an obsolete form for len-pa, "to seize, opportunity."

No. 110. *Targyúg*, a mountain in Zánkhar, lat. 33°, long. 77°.—*r*ta rgyug, "the running horse."

*R*ta, "horse;" rgyug, "to run." As the outlines of the mountain present nothing comparable to the form of a horse, the name seems rather to have a mystical signification and to lead to the "airy horse," in Tibetan "Lúngta," a frequent imploration of which is universally considered to be of the greatest efficacy for the good success of any undertaking. For details I refer to Emil Schlagintweit's "Objects of Buddhist Worship," part iii.

No. 111. *Társum*, stations for postal use in Tíbet.

The general name of such stations in Chinese Tibet, where horses and yaks are kept ready for the use of travellers, or for postal purposes; they are very numerous. *R*ta, "horse;" of "sum" we could obtain no proper explanation from the people. The dictionaries give for station *r*ta-zum, where "zum" is seen to have meant originally "bridge."

No. 112. *Tashilhúnpo*, the residence of the Pánchen Rinpóche Láma, in Eastern Tíbet, lat. 29°, long. 80°.—*b*kra-shis lhun-po, "the sublime glory."

*B*kra-shis, "glory;" lhún-po, "sublime." It is a city of chiefly ecclesiastical establishments, a little to the south-east of Digárchi, (see No. 20) the political residency, which was visited during Samuel Turner's embassy to the Court of the incarnated head Lama.

No. 113. *Ta tso*, in Zánkhar, lat. 33°, long. 77°.—*r*ta *m*ts'ho, "horse lake."

*R*ta, "horse;" *m*ts'ho, "lake."

No. 114. *Táuong*, in Bhután, lat. 27°, long. 92°.—*r*ta *d*vang, "the horses' power."

*R*ta, "horse;" *d*vang, "power." Also in this name we will have to explain, "the horse" by the "airy horse" Lúngta, and

its wonderful effects upon man's welfare (see Targyúg, No. 110); for there is no particular abundance of horses in the environs of this large monastery.

No. 115. *Tang Chéṇmo*, in Gnári Khórsum, lat. 31°, long. 79°.—thang chhen-mo, "the large plain (meadow)."

Thang, "plain, meadow;" chhen-mo, "the large." The Gărhváli name is Gúru Gárik. It is a halting place in the Upper Nélong valley. An analogous name is Changchén mo, in Pangkóng, lat. 34°, long. 78°.

No. 116. *Thang gŏng*, in Pangkóng, lat. 33°, long. 78°.—thang *s*gong, "Egg-plain."

Thang, "plain, meadow;" *s*gong, "egg." It is a halting place on the salt-lake Tsomognalarí; the name refers to its being the breeding place of numerous aquatic birds.

No. 117. *Thóling*, not unfrequently written *Tóling*, or *Tot Ling*, in Gnári Khórsum, lat. 31°, long. 79°.—*m*tho lding, "the high floating."

*M*tho, "high, elevated;" lding, "to fly, float." The name is an allusion to its great height (12,369 feet), as well as to its high rank amongst the monasteries. It was built, according to Ssanang Ssetsen's "History of the Eastern Mongolians, edited by I. I. Schmidt," St. Petersburgh, 1829, p. 53, as early as 1014 A.D., and it is still remarkably well preserved. Its various temples and establishments extend over a large surface, and are inclosed by a common wall, though not strong enough to be called a fortification; the laics, chiefly cultivators, live outside the walls. The head Láma, called Khánpo, is appointed by the Dalái Láma's government, and keeps his office from three to six years.

No. 118. *Thónpo*, a snow-peak in Zánkhar, lat. 33°, long. 76°.—*m*thon-po, "the lofty."

*M*thon-po, "lofty."

No. 119. *Tíbet.*

It is the name now received by the Europeans to designate the longitudinal valley between the Himálaya and the Karakorúm, which is drained to the east by the Dihóng (sometimes called by mistake Brahmapútra), and to the west by the river system of the Indus and Sátlej.

Ritter,[1] Cunningham,[2] and recently Köppen,[3] have collected several of the older modes of spelling Tíbet.

Marco Polo writes Thebeth, Simeon Sethi[4] knows Tovrát, the Arabian annalists Abu Zaid Al Hasan, in the year 913 A.D., Ibn Haukal, in about 950, Abu Reyhan, in 1030, and Edrisi, in 1154 write Ti-bat.

In the Chinese description of Tíbet, translated by Klaproth,[5] a victorious chief, who founded a powerful empire in Tíbet (about 630 A.D.), is said to have called it Tha-pho, a name which Chinese historiographers have changed into Thu-fa, or Thu-fan. In Mongolian, this country is called Tubed, the vowel "u" having a sound between the u as we use it here, and the French u in tu (= thou, Engl.); the same sound also exists in the Swedish language. In Kalmuki, the name sounds Töböd.[6] The names Tobbat and Töbot are incorrect, as Mr. Schiefner has shown, who also has made evident,[7] that the word Tíbet, or its modifications in use, are to be derived from the Tibetan words thub and phod, which have both the meaning of "to be able, to have strength, to dare;" they have been combined for increasing the power of their meaning.

The name now in use in Tibetan, besides several descriptive designations,[8] is Bod, Bod-yul (yul=country), decidedly a softer form of phod. To the Tibetans themselves Tíbet is now a foreign word. In the districts bordering on the British dominions, they have learned it from the English; but in Bálti, our brother Adolphe was told that the Mussulmans are considered to have introduced it long before Europeans visited the country.

No. 120. *Tísum*, in Gnári Khórsum, lat. 31°, long. 80°.—*bs*ti *g*sum, "three halts."

*Bs*ti, "halt;" *g*sum, "three."—The natives refer it to its being a halting place where three roads meet. Compare Súmdo (No. 113).

[1] "Erdkunde von Asien," vol. ii. p. 177.
[2] "Ladák," p. 119.
[3] "Die Religion des Buddha," vol. ii, p. 41.
[4] "De Alimentor Facultate," ed. Paris, p. 70.
[5] Nouveau Journal Asiatique, vol. iv. p. 106; compare also "Asia Polyglotta," p. 343.
[6] Also I. I. Schmidt writes so in his "Forschungen im Gebiete der älteren Bildungsgeschichte der Völker Mittelasiens," Petersburgh, 1824.
[7] Mélanges Asiatiques de St. Petersbourg, vol. i. p. 332.
[8] Such descriptive designations for Tibet are: Kha-va-chan-gyi-yul, "the land full of snow," (see No. 43); gangs ri'i khrod "an assemblage of snowy tracts;" gangs ri't *l*yongs "a tract of icy, or snowy mountains;" sa-yi-*lte*-va "the navel (the centre) of the earth."

No. 121. *Tsangbochú*, or *Dihóng*, the principal river in Eastern Tíbet.—*g*tsang-bo chhu, "the pure (sacred) water."

*G*tsang-bo, "the pure;" chhu, "water." In its upper course it is also often combined with Yáru, — Yáru Tsangbochu; yáru meaning "upper."

The Tsangbochú river is the principal affluent of the Brahmapútra, and is the same which with the Indians in Assám bears the name of Dihóng It was a long time mistaken for the Iravádi (*see* Klaproth: "Mémoires relatifs à l'Asie," Vol. iii., p. 370), and is still very often erroneously considered to be the Brahmapútra, though the direction as well as the quantity of water unmistakably define the principal river as such. Tsangbochú also occurs in Bálti as the name chiefly used by the natives for the Shayók river.

Tsángbo, or Tsángpo, seems to be repeated not unfrequently even for smaller rivers, either alone, or in compositions; as an instance, I name the Shung Tsángpo river, near Khargyál in Bálti.

No. 122. *Tso Gyagár*, in Rúpchu, lat. 33°, long. 78°.—"Lake with the white plain."

For details compare Gyagár (No. 31).

The sandy shores of this salt lake are well characterized by its name.

No. 123. *Tsokar*, in Rúpchu, lat. 33°, long. 77°.—*m*ts'ho *d*kar, "white lake."

*M*ts'o, "lake;" *d*kar, "white." The name "white," in this case, probably refers to the thin layers of salt along its shores.

No. 124. *Tsomognalarí*, a lake in Pangkóng, lat. 33°, long. 78°.—*m*ts'ho-mo *m*ngar la ri, "the fresh (water) lake in the mountains."

*M*ts'ho-mo, "the lake;" *m*ngar, "sweet, fresh;" la is the sign of the locative; ri, "mountain."

The word *m*ngar, "sweet," is referred to the water being so little salt, that it is drinkable; its pronunciation is here modified as the "ng" in Gnári Khórsum. (*See* No. 28.)

The Tsomognalarí lake is the largest in Western Tíbet; on the maps it is generally called Tso Pangkóng, from the province in which it is situated. Another name of Tsomognalarí is Chúru, as we were subsequently told by Captain Speke, the well-known African traveller.

No. 125. *Tsetháng*, in Eastern Tíbet, east of Tauóng.—*r*tse thang, "the flat top."

*R*tse, "top, point;" thang, "plain, open flat." Both component parts are frequently met with in Tibetan names.

No. 126. *Tso Gam*, in Rúpchu, lat. 33°, long. 78°.—*m*ts'ho *s*kam, "dry lake."

*M*ts'ho, "lake;" *s*kam, "dry." We should have written, as generally, "k" for the Tibetan letter here used, if we had not heard it distinctly pronounced "g," probably a provincial modification, so frequently met with in every language, particularly in Alpine countries.

The lake is not dry, properly speaking, but it is one of those which became unusually salt in consequence of the great evaporation, which it had undergone; its surface is now considerably reduced.

No. 127. *Tsomoríri*, in Rúpchu, lat. 32°, long. 78°.—*m*ts'ho-mo ri-ri, "mountainous lake."

*M*ts'ho-mo, "the lake;" ri-ri, according to Cunningham's "Ládak," p. 138, is "mountainous," the adjective of mountain. I could not succeed in obtaining an etymological explanation, when in the environs of the lake. Cunningham says, that there is also a legend, according to which the lake received the name from the cries of a drowning woman, crying out "riri" when, riding a yak, she lost her life in the water.

No. 128. *Tsomotéthung*, in Rúpchu, lat. 33°, long. 78°.—*m*ts'ho-mo dre 'thung, "the lake, the wild horse's drinking place."

*M*ts'ho-mo, "the lake;" dre (te), "mule, wild horse, kyang;" 'thung, "a drinking place." The name probably refers to its being visited by the wild animals in its neighbourhood.

No. 129. *Tsöna*, in Eastern Tíbet, north of Tauóng.—ts'ho nag, "dark community."

Ts'ho, "a flock, an integral, a community;" nag, "black, dark."

No. 130. *Tso Pang*, in Rúpchu, lat. 33°, long. 78°.—*m*ts'ho *s*pang, "the green lake."

*M*ts'ho, "lake;" *s*pang, "green." One of the numerous small lakes north-west of the Tsomognalarí lake.

No. 131. *Tso Rul*, in Pangkóng, lat. 33°, long. 78°.—*m*ts'ho rul, "putrid, bitter lake."

*M*ts'ho, "lake;" rul, "putrid, bitter." I found this name also given to several of the smaller lakes which I passed in Western Pangkóng.

No. 132. *Tsúrlog*, in Ladák, lat. 34°, long. 77°.—ts'hur logs, "towards this side, or wall."

Ts'hur, "here, this side;" logs, "side, wall." It is a halting-place on the side of a pass towards the more inhabited part of the country, in this case lying to the south. "On the other side of the mountain," would be Pharlogs, also occasionally used for a halting-place.

No. 133. *Yármi Chu*, in Bálti, lat. 34°, long. 76°,—yar-mi chhu, "the highlander's affluent."

Yar, "upper;" mi, "man;" chhu, "water." It is a lateral affluent of the Shayók river.

No. 134. *Yarkhór*, a district in Bálti.—yar 'khor, "upper settlement."

Yar, "upper;" 'khor, "literally followers, servants, establishment;" in Bálti it is frequently used in the composition of names of villages, particularly for settlements of Kúlis and followers of parties sometime ago so frequently fighting against each other in these regions.

No. 135. *Yórtot*, on the southern foot of the Dála mountain, in Eastern Tíbet.—yar *s*tod, "up the upper valley."

Yar, "up, upwards;" *s*tod, "the upper part of anything, a valley, etc." It is an elevated halting station, probably the highest inhabited place on the Dála mountain.

Yul sung, see *Lhássa* (No. 54).

No. 136. *Zámba*, used in Gnári Khórsum.—zam-ba, "a bridge."

Often used as an element of compositions in Tibetan names, particularly in Gnári Khórsum.

No. 137. *Zánkhar*, a province in Western Tíbet.—zangs *m*khar, "copper fort."

Zangs, "copper;" *m*khar, "fort."

The explanation of this name presented unexpected difficulties on account of the various modes of writing and pronouncing it.

Our brother, Adolphe, when in loco, was repeatedly told, that the first syllable should be taken as zan, "a thick soup with paste made of parched grain," a term which is also very frequently used for food in general.[1] This explanation agrees well, at least comparatively speaking, with the fertility of the valley of Zánkhar.

The dictionaries, as well as Cunningham and Strachey, transliterate zangs *d*kar, which gives the interpretation of "copper white" As pronounced, the name sounds "Zánskar,"[2] the "g" not being heard. When addressing Mr. Schiefner with the request that he would kindly assist and provide us with some more materials, he informed us, that in the "Tibetan Geography of Tíbet," as well as in various other Tibetan books, he found it spelled Sangsdkar, which coincides with the translation of "copper white." In some other books, however, he saw it written sans*m*khar, "copper fort." Our word "zan," as the kind of food described above, remained quite isolated, and was not corroborated by any Tibetan authority. In our selection of "copper fort," we were guided for *m*khar by the detailed explanation in our brother Adolphe's manuscript as meaning "fort;" the interpretation he obtained of "zan" not coinciding with the spelling in Tibetan literature, seems to be rather the consequence of a local mode of understanding it at present. As concerning the pronunciation, we write phonetically zankhar, because most of the natives suppressed the "s," which method is also supported by Csoma's observations.[3]

No. 138. *Zéthang*, in Bálti, lat. 34°, long. 76°.—zed thang, "bristle plain."

Zed, "a bristle;" thang, "a plain." The general name of the plain of Kápalu, which is referred to the thin bristling grass covering it.

[1] In this sense "zan" is also used in the sacred Tibetan literature. As an instance, I quote the address to the thirty-five Buddhas of confession, in Tibetan, entitled sdig-pa tams-chad *b*shags-par "repentance of all sins," for a translation of which see Emil Schlagintweit's "Objects of Buddhist Worship," part i, section ii, chapter v. In this address it is said, that man will recur to this treatise and read it with assiduity when the meanness will have become so general "that the priests shall eat the zan (food) offered to the Buddhas."

[2] Csoma, and Schmidt "Dictionary," sangs kupfer "(Engl. copper); Cunningham's" Ladák, p. 21; Strachey's "Map of West-Nari."

[3] "Grammar," p. 5.

Art. VII.—*Bactrian Coins.*

[*5th July*, 1862.]

The subjoined paper was commenced, with a view to its insertion in this Journal, more than two years ago; circumstances, over which I have had no control, have delayed and still obstruct its completion; nor would it now appear, in its imperfect and unfinished state, were it not that the illustrative plates, prepared for the occasion, await an accompanying notice.

The original design of the article was, to undertake a more careful examination of the extensive series of Bactrian Coins described in my edition of "Prinsep's Essays on Indian Antiquities,"[1] which I had, at the moment of publication, neither time nor space to do more than classify in an outline catalogue, and further, to incorporate in the general list whatever novelties might be found in the choice collections of Major Hay and Colonel J. Abbott, which had only lately been brought to this country.[2]

[1] J. Murray, London, 1858.

[2] Major Hay's extensive collection, formed during many years' residence in the Hill states of the Punjáb, is still in that gentleman's possession. A few of the rare specimens have been secured for our National Museum.

The carefully selected cabinet of Col. J. Abbott, obtained almost *in situ* during his official superintendence of the Huzárah country, has been temporarily deposited for reference in the British Museum, in the laudable desire of making its contents available for the study of those interested in this branch of Numismatic Science. Among other interesting novelties, Col. Abbott's collection contributes a coin of a new King, named Epander.

It is a square copper piece, with an obverse device of a figure of Victory, with chaplet and palm branch, to the right, and the legend—

ΒΑΣΙΛΕΩΣ ΝΙΚΗΦΟΡΟΥ
ΕΠΑΝΔΡου

Reverse—Bull to the right; legend imperfect.

Maharajasa Jayadharasa
(e)padra(sa).

I must not omit to take this opportunity of expressing my obligation to Mr. J. Gibbs, of the Bombay Civil Service, who, amid a very limited number of specimens, has succeeded in securing two of the most important gems of the

As it will be seen hereafter, that certain of these published acquisitions had already necessitated a revision and partial reconstruction of the previously-received arrangement of the order of the Bactrian Kings, it was clearly desirable that the limited evidence furnished by the classical authors who treat directly on this section of history, should be reproduced anew, in as simple and intelligible a form, and in as much of a continuous narrative as the materials admitted of—not only as properly introductory to the special enquiry, but as furnishing an appropriate groundwork for any modifications the recent medallic testimony might appear to demand—and, to complete the summary of recorded data, it was proposed to append any obviously-needed annotations, as well as any incidental information that might chance to be gleaned from other authors who only indirectly adverted to the special subject under reference, seeing that the fragmentary Bactrian proper history required to be checked by dates and events primarily pertaining to contemporaneous dynasties, whose annals claimed a higher interest among Western writers, and thus secured a more ample and abiding chronicle.[1]

In any such review as the present, however, the early historical or latest numismatic evidence would be incomplete without a reference to the labours of modern scholars, whether of the class who have drawn their knowledge solely from the exact study of the classic authors, or those who, more practically, have based their investigations on the progressively-increasing store of ancient coins, applied with a greater or lesser degree of acumen to the critical history prepared for them by the former. With this object an abstract series of tables giving the results arrived at by successive enquirers, has been inserted immediately after the translations of the Greek and Latin texts.

Bactrian series, the one being, not only unique, but of the utmost value in the new phase it puts upon the collocation of the earlier monarchs, the second which is of but little less interest, being a well executed variant of the original and previously unique coin of M. de Bartholomæi.

[1] This purpose has been so far modified by the subsequent departure from the original plan of the article, that I now reserve the discussion of the subordinate collateral passages bearing on the three prominent texts quoted in detail, for their possibly more appropriate place in direct connection with the reigns of the different monarchs, as they may severally come under notice in the eventual, though problematical, continuation of the article as it now stands. Equally, the general geographical inquiry will be set aside for examination at the conclusion of the paper, though incidentally the subordinate details may require to be adverted to as occasion arises.

As a prelude to the written history of the period, it is necessary to advert, in the first instance, to a nearly contemporaneous monumental record of the Indian Sovereign Asoka, engraven on the Kapurdigiri Rock, in the Pesháwur valley, a site not far removed from Bactrian boundaries, and destined soon to pass into the hands of the successors of Diodotus.

The historical value of the inscription in question, which, on its first discovery, was expected to throw new and important light upon the then state of political intercourse between the east and the west—is, I regret to say, but limited. Asoka, indeed, in his Buddhist proclamation preserves in detail the names of Antiochus, Ptolemy, Antigonus, Magas, and Alexander, implying by the context, which, however, is obscure in the hitherto published transcripts, that these potentates, in some way, consented to aid or abstain from discouraging the tenets of the creed advocated by the Indian monarch. A large amount of speculation has been indulged in, with a view satisfactorily to fix a given epoch during the proved co-existence of the five western kings, apropos to their mention in the text, and thereby to determine the date of the inscription itself. But, as this monumental writing, like its counterparts, in the Indian Pálí character, at Dhaulí and Girnár, is dated in the years of the Buddhist Sovereign's reign, and the identity of *Priyadarsi*,—the epithet used in these edicts,—with Asoka is generally admitted, the simplest method of determining the period of their composition, is to apply their internal evidence to the now almost uncontested era of Asoka's accession. That monarch is held to have succeeded his father Bindusára in 263 B.C., and to have been formally inaugurated in 259 B.C. This would bring the date of the viii.th tablet to 249—8 B.C.;[1] and tablets iii. and iv. to 247—6 B.C.[2] That the writing was inscribed on the rocks at a period even subsequent to these dates, there is every reason to believe,[3] which circumstance at once does away with any importance the inscriptions might otherwise possess as *bonâ-fide* synchronous records.

Amongst other unexplained difficulties inherent in the texts of these edicts, is one, which I am not aware of having been the subject of previous remark, viz.: that the name of Antiochus should appear alone in the ii.d tablet, while it is placed in association

[1] J.R.A.S. xii, p. 202, "having been ten years inaugurated."

[2] Ibid, p. 173, Tablet iii, "twelve years inaugurated;" p. 181, Tablet iv, "in the 12th year of his inauguration."

[3] J.R.A.S. xii, p. 249.

with those of the other four kings in the later tablet. I do not think I am hazarding too much in suggesting that the portion which contains the reference to the five Princes, is an addition made subsequent to the composition and incision of the body of the writing. The inscriptions themselves go far to establish this fact. The Dhaulí epigraph is the only one of the triple versions we are able to refer to, that may be termed a clean and unbroken copy, following, section by section, in parallel columns, and containing eleven tablets in all. The Girnár lapidary writing is in accord with its eastern counterpart, up to the end of the x.th tablet, when three extra edicts are interpolated, and the xi.th tablet of Dhaulí becomes the xiv.th of Girnár. It would seem to be something more than a coincidence that these same three extra tablets do not form a portion of the continuous inscription on the northern face of the Kapurdigiri rock, but are graven on a separate surface at the back of the stone; and it is in the second of these supernumerary edicts, in either case, that the five Kings' names occur. The subsequent addition of these three tablets being conceded, I should account for the anomaly by supposing that when the front face of the Kapurdigiri and the entire text of the Dhaulí inscription were prepared, Asoka's emissaries had only secured the adhesion of Antiochus Theos himself—the accession of the good will of the other four Kings was probably obtained later and embodied in the supplementary passages. This is a point of no very great moment, but it militates, equally with the inference previously drawn against the immediate, or strictly contemporaneous, execution of the writing itself.

Of the various theories that have been propounded to explain the association of these individual five monarchs, and to satisfy the requirements of probability as to their due identification, the most rational appears to be that put forward by Mr. James Fergusson. Leaving the architectural question to rest on his high authority, I may fully concur in accepting the historical combination so appositely prepared for us in the single chapter of Justin.

"The most interesting record is that contained in the xiii.th edict of the rock-cut inscriptions, where he [Asoka] mentions having formed treaties or alliances with Ptolemy, Antiochus, Antigonus, Magas, and Alexander; not treaties of war or peace, but for the protection or aid of his co-religionists in the dominions of those Kings. Owing to the imperfections of the stone and of the record it is not easy to make out what is exactly intended; but this much is certain, that about the year 256 B.C., Asoka did make arrange-

ments for religious purposes with Ptolemy Philadelphus, Antiochus Theos, Antigonus Gonatas, with Magas of Cyrene, and Alexander, who could only be the King of Epirus and Macedonia, mentioned by Justin, in the same passage in which he relates the death of Magas."[1]

"The existence of rock-cut Viharas or Monasteries at Petra, in the dominions of Antiochus, and of similar excavations at Cyrene, goes far to confirm and elucidate this; for though travellers have hitherto called every excavation a tomb, there can be no doubt that many of those at Petra and Cyrene and elsewhere, were the abodes of living ascetics, and not burial places at all."[2]

As Magas died in 258 B.C., even the body of Asoka's inscriptions must have been prepared 12 years after that event, or about 246 B.C. while the additional section, in which the five Kings' names are given, must have been inscribed after a still more extended interval. Either Asoka's emissaries tarried unduly by the way, or the whole passage must be received as a mere record of a past but yet uncancelled treaty, retaining possibly a certain importance among Buddhist votaries on the frontier, and hence thought worthy of publication in the Northern and Western States of the Indian monarch, but of insufficient moment to be either proclaimed in the South, or of enduring interest enough to be reproduced amid the subsequent pillar edicts of the 27th year of his reign.[3] The absence of any notice of the Bactrian Kings may readily be accounted for, on the ground that Antiochus II. was still, as far as foreign nations were concerned, the reputed suzerain of the countries they had possessed themselves of.

However, I am unwilling to enlarge on any deductions from the comparatively imperfect materials furnished by the published copies of these inscriptions, as I am aware that no less than two new counterpart versions have lately been discovered, which may seriously modify or largely improve the results obtained from Professor Wilson's elaborate analysis.[4]

[1] Justin, "Historiæ" xxvi, c. ii.

[2] Quarterly Review, 1860, p. 218.

[3] Jour. As. Soc., Bengal, April, 1838.

[4] While adverting to the subject of Ancient Indian Inscriptions, I am anxious to take the opportunity of noticing a series of translations, submitted to the Bombay Branch of the Royal Asiatic Society, by Dr. Bhâu Dâjî, an abstract report of which has been received as these sheets are passing through the press. As the paper in question refers to much that has already been the subject of comment in this Journal, and contributes a large amount of new information on a

The first of these is referred to in a communication from the Government of Madras to the Secretary of State for India, dated April, 1860, forwarding photographs of "an inscription on a

succession of Indian inscriptions, I have thought it advisable to reprint the notice nearly entire, reserving for a future occasion any of the numerous remarks its text suggests. As I am ordinarily better inclined to respect the philological aptitude of our Eastern fellow-labourers to decipher and translate indigenous inscriptions couched in a tongue so largely infused into the vernaculars of India, than to accept the speculative combinations or suggestive identifications of the Native mind.

AUGUST 14, 1862.—Dr. Bhâu Dâjí then read his translations, 1st of the "Sah" inscription on the Girnar rock in Surâshtra, 2nd of the incription on the northern face of the Girnar rock, and concluded with the following remarks on the Sah, Gupta, and Valabhi dynasties. "The Sah inscription, the revised fac-simile and translation of which have this day been submitted to the Society, was deciphered and published by Prinsep in the vii.th volume of the Journal of the Bengal Asiatic Society, p. 334. Mr. E. Thomas has republished the same in his admirable edition of Prinsep, and has added a revised translation of the record by Professor H. H. Wilson, based on an independent transcript of the original, which Mr. Thomas had prepared with much care from the improved fac-simile of Messrs. Westergaard and Jacob, published in the Journal of the Bombay Branch of the Royal Asiatic Society for April, 1842.

"Professor Wilson's translation is anything but an improvement. * *

"The translation of the Sah inscription differs in many important particulars from that of Mr. Prinsep; the name of the lake Sudars'ana occurs at the very commencement, but is not recognized by him. Mr. Prinsep's Aridâmâ is only a mislection of Rudra Dâmâ, from the imperfect fac-simile.

"An historical fact of great importance in my translation is, that Rudra Dâmâ appears to have been a grandson of Swâmi Chashtan, and not his son. The inscription contained his father's name, but that part of it is unfortunately completely lost. The names of the countries as I read them, over which Rudra Dâmâ ruled, are also somewhat different The names A'kara and Avantí occur in Padumâvi's inscription in one of the Nasik caves. The others need not detain us here.

"The name of the actual builder of the bridge is not the Pahlava Mavya or contractor as rendered by Mr. Prinsep, but the Pahlava Minister of Rudra Dâmâ, named Suvis'akha, a Sanscrit adaptation, I think, of the Persian name Siavaksha. His father's name, as I make it out, is Kulaipa, and Siavaksha appears to have been the Governor of A'narta and Surâshtra.

"This inscription offers materials for many observations, but I must reluctantly postpone most of them to another opportunity.

"In the second inscription we have the names of Skandagupta and of Parnadatta, and his son Chakrapâlita.

"Skandagupta is undoubtedly the monarch whose name has been discovered on coins, on the Bhitâri lat, and on the Kuhaon pillar. To-day I have fulfilled the promise I made in my paper on Kalidâsa of furnishing a translation of the remaining Junagur inscription. Mr. Thomas has remarked that 'up to this time no more satisfactory account of its purpose and contents can be given than is to be found in the brief notice published by Prinsep in April, 1838 (Prinsep's Indian

rock, near the village of Naugám, in the Pubbakonda Táluk, about 3 miles from Pursatpúr near the Rushkulia river in Ganjam." "The rock [is described as] standing in a quadrangular space enclosed by high embankments, indicating ancient fortifications. The place is called Jonghar or Lac Fort."

The authorities in India do not seem to have been aware of the purport of this inscription, but Mr. Norris has compared some portions of it with the Girnár and other texts, and finds, he believes, that it is so far a counterpart transcript of Asoka's edicts.

The second new inscription has been brought to notice by Colonel A. Cunningham, who describes the site and condition of the

Antiquities by Thomas, vol. i, page 247).' All that Mr. Prinsep found was 'an allusion to Skandagupta, one of the Gupta family, &c.' It appears that Parnadatta was appointed Governor of Surâshtra, by Skandagupta, and the son of Parnadatta, named Chakrapálita, with two sons were in office, in the same province. The Sudars'ana lake appears to have given way in the 13th year of the Gupta Kála, or Gupta era; it was repaired seven years after, in the 137th year of the Gupta Kâla by Chakrapálita, who also erected a temple to Vishnu on the top of the Jayanta hill, or the hill of Girnar, in the 138th year of the Gupta era.

"In my essay on Kalidâsa I remarked that the Kuhaon pillar inscription is dated 'in the 141st year of the Gupta dynasty, in the reign of Skandagupta, and not after his decease as deciphered by Prinsep.' The present inscription leaves no doubt of the correctness of my interpretation, and will enable us to fix the chronology of the Gupta and Valabhi monarchs with some certainty.

"The position of Skandagupta in relation to the Gupta era being now placed beyond doubt, the other dates of Chandragupta, Samudragupta, and Budhagupta, as made out from inscriptions, must now be granted to commence from the Gupta era.

"The dates obtained are Chandragupta Vikramâditya 82 (Udayagiri inscription) and 93 (Sanchi inscription) Skandagupta 141 (in the Kuhaon pillar inscription). Budhagupta 161, in the Eran pillar inscription.

"At the next meeting I shall produce proofs to show that the Valabhi plates are dated in the S'aka Nripa Kâla, and that the symbol which has been hitherto read 300 is really 400.

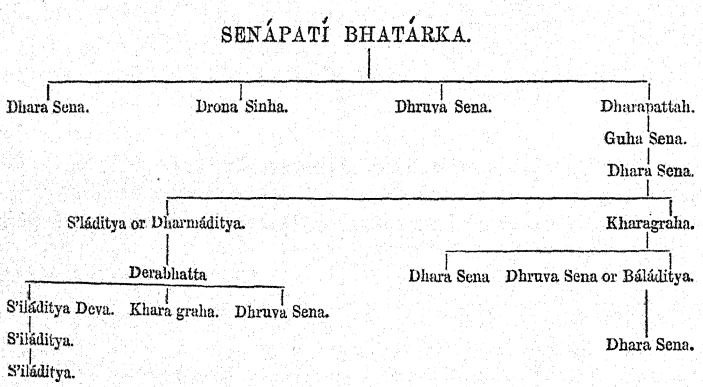
"Granting these premises, as the Valabhi era is found in Colonel Tod's Somnath inscription to have commenced in A.D. 318, Skandgupta must be placed in A.D. 448-459 with a margin of five or ten years on each side

"The Valabhi plates bear dates in my opinion from 410 to 465 S'aka Kâla *i.e.* from A.D. 488 to A.D. 543. The Valabhi dynasty, of which Bhatârka Senápatí was the founder, dates it rise, therefore, shortly after Skandagupta, a fact borne out by a comparison of the alphabetical characters of the monumental records of the Gupta dynasty, and of the copper-plate grants of Valabhi. I may here remark that Dr. Mill's interpretation of Bhitâri lat is most defective, and the genealogy of the Valabhi dynasty has not yet been correctly given. I should be thankful to any lover of antiquities for procuring for me a fresh fac-simile of the Bhitâri lat inscription.

stone upon which it is engraved, in a late report to the Government of India, from which the following is an extract :—

"*Khalsi*, on the Jumna, where the river leaves the hills. At

"The correct genealogy of the Valabhis is, I think, as under :—



"Colonel Cunningham is right in placing the Gupta era in A.D. 318, but in admitting the Guptas noticed by Hiouen-Thsang amongst the successors of Skandagupta he has committed a grave error which has been correctly and fully exposed by Mr. Thomas, who is, however, I think, himself wrong again in placing the Sahs of the coins as early as the second and first century before Christ; and to a brief consideration of this point I shall now proceed.

"On comparing the alphabetical characters of the inscription in the reign of Padumáví, the Andhra King, at Nasik, Karlen, and Kanheri, with those of the Rudra Dámá or Sah inscription, no doubt the Padumáví inscriptions will appear the older of the two.

"This Padumáví or Puloman was pronounced long ago by Wilford to be identical with Siri Pulomai of Baithan or Paithan on the Godavery, mentioned by Ptolemy Claudius. Professor Lassen has also pointed out the identity. I have a new inscription of Padumáví on a tank on the Nana Ghaut. There is no reason to doubt that Padumáví, the Andhra King, was a contemporary of Ptolemy, and that he flourished about A.D. 120. Ptolemy in noticing Ozene or Ujjayiní, mentions it as the royal residence of another king whom he calls Tiastanus. This Tiastanus is, in my humble opinion, no other than the Swámi Chashtan of our Sah inscription. If we grant that Chashtan was a contemporary of Padumáví and Ptolemy, we can well allow that Chashtan's grandson Rudra Dámá conquered repeatedly (as stated in the inscription) the last of the Andhras; for within 50 years of Padumáví's death, the Andhra dynasty ends, a misfortune no doubt brought about by the rising power and personal qualities of Rudra Dámá. I have already stated that a comparison of the alphabetical character of the inscriptions shows that Rudra Dámá flourished shortly after Padumáví; I have also shown that we must place the rise of the Gupta dynasty in A.D. 318, and as there are cogent reasons for believing that the Guptas succeeded the Sahs, the date of A.D. 200 for Rudra Dámá appears not incompatible. I may here re-

this place there still exists a larger boulder-stone, covered with one of Asoka's inscriptions, in which the names of Antiochus, Ptolemy, Antigonus, Magas, and Alexander are all recorded. This portion of the inscription, which on the rock of Kapurdigiri (in the Yusufzai plain), and of Dhauli (in Cuttack) is much mutilated and abraded, is here in perfect preservation."[1]

However imperfect in the contributions to history, these inscriptions possess a value peculiarly their own, under the Palæographic aspect, in the assistance they have afforded, primarily, in determining the value of the hitherto obscure Semitic characters on the Kapurdigiri rock, and by their aid correcting the previously doubtful Bactrian counterparts of the Greek names on the early coins;[2] but, more important still, the phonetic value of the letters

mark that the most distinguished monarch of the S'atkarní or Andhra dynasty was Gautamiputra, the father of Padumávi. He appears to have extended his conquests over Malwa, Gujarat, Cutch, Akar and all those provinces over which a Kshatrap or Satrap of the Parthian dynasty (Phrahates) ruled immediately before. This I make out from the inscriptions. Gautamiputra is praised for having established the glory of the S'átaváhan family, for having defeated Sakas, Yavanas, and Pahlavas, and for exterminating the descendants of Khagarát (Magadhi), Kshaharáta (Sanskrit), (Phrahates). As Nahapána, the Satrap of Phrahates judging from the character of the inscriptions, preceded Gautamiputra, and had proceeded on an expedition to Malabar from the North, and through the Deckan, the Andhra princes of Paithan could not have been powerful, and as Gautamiputra appears to have been the bravest and most successful of the whole, I am strongly inclined to look upon him as the founder of the S'áliváhan era.

"I cannot help also pointing out the great similarity of the titles Zathou Korano and Zathou Vahano, to S'átkarní and S'áta Váhana. I am inclined to look upon Kadphises as Sipraka or Sikrapa, the founder of the Andhra dynasty; Krishna, his brother, as Kanerki, and Su-Hermeus his predecessor as Susarman the Kánva. If further analogies were required, I may point out the similarity of Athro to Andhra, and of Ado to Adha, also of Athro Pharo to Andhrabhrit, the former class of words occurring on the coins of Kadphises and Kanerki; the latter in the Puranas and inscriptions. The title Rao Nana Rao on the coins of Kanerki is more common in the Deckan, the former seat of the Andhras, than in any other part of India. I am also strongly inclined to look upon the name of Nana Ghaut as coming from the goddess Nanaia. It contained in a cave or recess, at its top, images of the founder of the Andhra dynasty; also of the chiefs of the Marathas, of Kumára S'átaváhana, and Kumáro Hakusirí and of another Kumára whose name is lost. Haku may be intended for Hushka. The word Kumáro also occurs in some of the Indo-Scythic coins. These reflections regarding the founder of the Andhra dynasty, I beg to offer more as speculations to direct attention and invite discussion than as the mature results of deep research."

[1] J.A.S. B. No. I. 1862, p. 99. Memorandum by Col. A. Cunningham regarding a proposed investigation of the Archæological remains in Upper India.

[2] Dr. Latham, in his paper on the date and personality of Priyadarsi (vol. xvii, p. 273 of this Journal), has failed to do justice to the assistance we derive from

being now uncontested, we are able to master the names and designations of the later sovereigns, who flourished at a period when the local character had superseded the debased and gradually disused Greek, which had hitherto furnished the sole key to the decipherment of the Semitic variety of Arian writing. And, finally, by the means thus placed at our disposal, we may hope to read what is now becoming of itself a promising series of Bactrian proper inscriptions, of which we have neither Greek nor Indian Pali transcripts or translations.[1]

Mr. Norris's decipherment of the Kapurdigiri Inscription (J.R.A.S. viii, 303), and, singularly enough, quotes the Bactrian equivalents of the Greek names on the coins, from the "Ariana Antiqua," which purely tentative readings exhibit only our early want of knowledge of the character, and in no way prove the ignorance or incomplete power of definition of the local transcribers of ancient days; indeed, since Prof. Wilson has published his parallel transcript and translation of the various rock inscriptions of Asoka, we discover that the Arian versions of the Greek designations are defined with considerable accuracy, and by no means authorise the "latitude" in "identification," that should make Priyadarsi into Phraates. I need scarcely add that I do not concur in Dr. Latham's theory.

[1] Babu Rajendra Lal Mitra has lately published in the Journal of the Asiatic Society of Bengal (1861 p. 337), a revised transliteration with an original translation of the Bactrian Páli Inscription on the Wardak vase, from the facsimile lithographed as Plate x. vol. i, Prinsep's Essays on Indian Antiquities (J. Murray, London, 1858). The Babu conjectures, with some plausibility, that the name of the Mahárája is *Huvishka*, who has been identified with *Hushka*, the King of Kashmír of the Raja Tarangini, the Ooerki, OOHPKI, of the debased Greek numismatic legends (Ariana Antiqua 375), whose name is so frequently associated with that of Kanishka, the Kanerki of the Indo-Scythian Coins. I may add, as a matter of interest connected with monumental records of this age, that an inscription of Hushka, in the square Indian-Pali character, has been lately discovered at Muttra. (See note by Mr. E. C. Bayley, Jour. As. Soc. Bengal, 1861, p. 347).

Professor Dowson has succeeded in mastering the inscription on a steatite funereal vase, preserved in the Peshâwur Museum, which proves to refer to the erection of a *tope* by the Brothers Gihilena and Siha-rachhitena. And finally Mr. Norris, in concert with Mr. Dowson, is engaged on a most promising Inscription from the neighbourhood of Hussun Abdal, near Râwul Pindee, in the Punjâb, regarding which Professor Dowson has obligingly communicated to me the following notice:—

"The plate, which is fourteen inches long by three and-a-half broad, is broken in the middle, where many of the letters are lost; a connected reading of the whole cannot, therefore, be hoped for. The King's name is *Chhatrapa Siliako Kusuluko*; these words are followed by *nama*, so there can be no doubt that they form the name. After the name there are some letters obliterated, and then follow the words *Takhasilaye nagare utarena prachu deso*, which probably mean 'the country north-east of Taxila." The words *Chhatrapa liako* are stamped as

I now annex an English version of the texts of the classic historians.

"Justin, xli, c. iv.[1]—After the death of Alexander the Great, when the kingdoms of the east were divided among his successors, the government of Parthia was committed to Stasanor, a foreign ally, because none of the Macedonians would deign to accept it. Subsequently, when the Macedonians were divided into parties by civil discord, the Parthians, with the other people of Upper Asia, followed Eumenes, and when he was defeated, went over to Antigonus. After his death they were under the rule of Seleucus Nicator, and then under Antiochus, and his successors, from whose great-grandson, Seleucus,[2] they first revolted, in the first Punic war, when Lucius Manlius Vulso and Marcus Attilius Regulus were Consuls.[3]

an endorsement on the back of the plate." I myself have not had an opportunity of examining this inscription, but I should be inclined, as a first conjecture, to identify the *Kusuluko* with some of the Kozola Kadapes family. The figured date on the plate is ××₂333, which is followed by the words *Mahārayasa mahāta*, &c. (Prinsep's Essays ii. 202, 203).

[1] Translation of the Rev. J. S. Watson. Bohn's Edit: London, 1853.

[2] Clinton justly remarks,—"The account of Justin is inconsistent with his date. *Seleucus*, the *son* of *Antiochus Theus*, began to reign four years later. But this date is confirmed by Arrian apud Photium, cod. 58, who seems to fix the revolt to the reign of *Antiochus*. * Eusebius agrees in this date, Ol. 132, 3 [B.C. 250] Parthi a Macedonibus defecerunt: ex iisque unus imperavit Arsaces a quo Arsacidæ * * Suidas Ἀρσάκης ὁ Παρθυαῖος, &c. * * The 293 years computed from B.C. 538 (the beginning of the reign of *Cyrus* in the Canon) will give B.C. 245 for the commencement. Strabo, xi, c. ix, 2 * * The establishment was therefore gradual, and might not be completed till the reign of *Seleucus*. Justin xli, 4, describes the acquisitions of Arsaces as gradual, and adds, c. 5, "quæsito simul constitutoque regno matura senectute decedit."—Fasti Hellenici, p. 18.

[3] Clinton Fasti Romani, ii, 243, places Arsaces in B.C. 250. Fasti Hellenici iii, p. 18, "I read in Justin L. Manlio Vulsone C. Atilio Regulo coss—that is, I understand with Valesius ad Ammianum 23, 6, 3, CAIUS Atilius Regulus L. Manlius Vulso the consuls of B.C. 250, and not L. Manlius Vulso MARCUS Atilius Regulus the consuls of B.C. 256. I prefer the lower date because it is more consistent with Justin himself, who refers the acts of Arsaces to the reign of Seleucus, B.C. 246, and with the dates preserved by other authorities. Eusebius and Suidas, who are quoted in the Tables F. H. iii, p. 18, give B.C. 250 and 246. Moses Chorenensis ii, 1, refers the rise of Arsaces to the 11th year of Antiochus Theus: undecimo ejus anno a Macedonum jugo Parthi defecere, that is in B.C. 251; or 60 years after the era of the Seleucidæ began: ii, 2, post sexaginta annos quam Alexander mortuus est, Parthis imperitavit Arsaces. But the 60th year of that era (which is here meant) was completed in autumn, B.C., 252. These dates also more nearly agree with the later date, B.C. 250."

Mr. J. Lindsay, the latest writer on Parthian Numismatics, places the revolt of the Parthians in 255 B.C.; but as he does not notice Clinton's emendation of

For their revolt, the dispute between the two brothers, Seleucus and Antiochus, procured them impunity; for while they sought to wrest the throne from one another, they neglected to pursue the revolters.

"At the same period, also, Theodotus, governor of the thousand cities of Bactria, revolted, and assumed the title of king; and all the other people of the east, influenced by his example, fell away from the Macedonians. One, Arsaces, a man of uncertain origin, but of undisputed bravery, happened to arise at this time, and he, who was accustomed to live by plunder and depredations, hearing a report that Seleucus was overcome by the Gauls in Asia, and being consequently freed from dread of that prince, invaded Parthia with a band of marauders, overthrew Andragoras, his lieutenant, and after putting him to death, took upon himself the government of the country. Not long after, too, he made himself master of Hyrcania, and thus, invested with authority over two nations, raised a large army, through fear of Seleucus and Theodotus, king of the Bactrians. But being soon relieved of his fears by the death of Theodotus, he made peace and an alliance with his son, who was also named Theodotus;[1] and not along after, engaging with King Seleucus, who came to take vengeance on the revolters, he obtained a victory; and the Parthians observe the day on which it was gained with great solemnity, as the date of the commencement of their liberty.

"Justin, xli, c. v.—Seleucus being then recalled into Asia by new disturbances, and respite being thus given to Arsaces, [ii.d] he settled the Parthian government, levied soldiers, built fortresses, and

the consular date, or enter upon any discussion of the subject, I presume he accepted the ordinarily received epoch without question. "Coinage of the Parthians," Cork, 1852. The author of the article, "Arsaces," in Smith's Dictionary (London, 1844), who seems to have examined the various authorities with unusual care, gives the preference to the date of 250 B.C.

[1] M. de Bartholomaei, in his "Réponse a Mr. Droysen," incidentally offers some valuable criticisms on this statement of Justin:—

"Nous ferons observer encore, que le témoignage de Justin sur les premiers Arsacides est assez conforme à celui qui nous occupe dans ce moment. On le trouve dans le même livre. Justin, après avoir fait des deux premiers rois Parthes un seul Arsace, dit de ce roi: 'Cujus memoriæ hunc honorem Parthi tribuerunt ut omnes exinde reges suos Arsacis nomine nuncupent. Hujus filius et successor regni Arsaces et ipse nomine * * Il s'agit cependant du troisième roi Parthe que nous trouvons dans un auteur bien plus digne de foi, sous le nom d'Artaban, et ce dernier nom, ainsi que celui du second roi (Tiridate) a été omis par Justin. Cette double omission ne peut être motivée par la seul raison que tous les rois s'appelaient Arsace, car dans ce cas ce nom répété ne signifierait rien; ou bien,

strengthened his towns. * * His son [?] and successor on the throne, whose name was also Arsaces, fought with the greatest bravery against Antiochus the son of Seleucus, who was at the head of 100,000 foot and 20,000 horse, and was at last taken into alliance with him.

"Justin xli, c. vi.—Almost at the same time that Mithridates ascended the throne among the Parthians, Eucratides began to reign among the Bactrians;[1] both of them being great men. But the fortune of the Parthians, being the more successful, raised them, under this prince, to the highest degree of power; while the Bactrians, harassed with various wars, lost not only their dominions, but their liberty; for having suffered from contentions with the Sogdians, the Drangians, and the Indians, they were at last overcome, as if exhausted, by the weaker Parthians. Eucratides, however, carried on several wars with great spirit, and though much reduced by his losses in them, yet, when he was besieged by Demetrius, king of the Indians, with a garrison of only 300 soldiers, he repulsed, by continual sallies, a force of 60,000 enemies. Having accordingly escaped, after a five month's siege, he reduced India under his power. But as he was returning from the country, he was killed on his march by his son, with whom he had shared his throne, and who was so far from concealing the murder, that, as if he had killed an enemy, and not his father, he drove his chariot through his blood, and ordered his body to be cast out unburied. During the course of these proceedings among the Bactrians, a war arose between the Parthians and Medes, and, after fortune on each side had been some time fluctuating, victory at length fell to the Parthians, when Mithridates, enforced with this addition to his power, appointed Bacasis over Media, while he himself marched into Hyrcania (and ultimately) extended the Parthian empire * * from Mount Caucasus to the river Euphrates."

[As the prologue of this book of Justin's history is of considerable importance, I revert to the original text]. Prologus, lib. xli.

si l'auteur avait voulu l'appliquer à tous les rois, il aurait également suffi au 4me dont Justin fait le 3me; (tertius Parthorum rex Priapatius fuit, sed et ipse Arsaces) or Justin s'exprimant de la même manière sur le nom du fils de Diodote que sur celui du fils d'Arsace, a bien pu commettre le même genre d'erreur pour tous les deux. * * * "Mais Justin confond quelquefois les faits, et encore plus souvent les noms; et comme cette fois il n'est appuyé par aucun autre auteur, son témoignage concernant le nom du fils et successeur de Diodote, n'est pas d'un bien grand poids." 134.

[1] Delph. *Note*, B.C. 182.

Uno et quadrigesimo volumine continentur res Parthicæ et Bactrianæ. In Parthicis, ut est constitutum imperium per Arsacem regem. * * In Bactrianis autem rebus ut a Diodoto regnum constitutum est: deinde qua re pugnantes Scythicæ gentes Saraucæ et Asiani Bactra occupavere, et Sogdianos. Indicæ quoque res additæ, gestæ per Apollodotum et Menandrum, reges eorum. Teubner's Edit., p. 232, 1859.

Strabo, B. xi, c. ix, 2.[1]—Disturbances having arisen in the countries beyond the Taurus in consequence of the Kings of Syria and Media, who possessed the tract of which we are speaking, being engaged in other affairs,[2] those who were intrusted with the government of it occasioned first the revolt of Bactriana; then Euthydemus and his party the revolt of all the country near that province.[3] Afterwards Arsaces, a Scythian[4] * * invaded Parthia, and made himself master of it. * * The Parthians at last took possession

[1] Translation by W. Falconer.—Bohn's Edit., London, 1856.

[2] Adopting Tyrwhitt's conjecture *πρὸς ἄλλοις*. W.F.

[3] Strabo xi. s. iv. French translation by MM. De la Porte du Theïl, Coray, and Gosselin. Paris, 1805. Vol. iv. p. 272.

Il se fut élevé de grands troubles dans les pays D'AU DELÀ du Taurus; on vit d'abord les officiers auxquels étoit confié le gouvernement de la Bactriane, se soustraire à leur autorité; et Euthydémus se rendit maître de ce qui avoisinoit cette province.[a] Ensuite Arsacès, Scythe d'origne, &c.[2]

[4] Elsewhere [ix, 3] Strabo says,—"according to others he was a Bactrian, and, withdrawing himself from the increasing power of Diodotus, occasioned the revolt of Parthia."

[a] *On vit d'abord*, &c. Je crois avoir rendu assez littéralement le grec:—*Πρῶτον μεν τὴν Βάκτριανὴν ἀπέστησαν οἱ πεπιστευμένοι, καὶ τὴνἐγγὺς ὑς πᾶσαν οἱ περὶ Εὐθύδημον.* Mais cette phrase obscure donne matière à beaucoup de difficultés historiques et chronologiques. Pour les exposer toutes, fût-ce de la manière la plus simple, il faudroit une note extrêmement longue; et je ne tenterai point de les résoudre, quand, à plusieurs reprises, de savans hommes l'ont vainement essayé.[b] Seulement dirai-je que, d'après un autre passage (cap. xiv.) on pourroit croire qu'ici les mots, *καὶ τὴν ἐγγὺς αὐτῆς πᾶσαν οἱ περὶ Εὐθύδημον*, annonçant des faits postérieurs à la première défection des satrapes de la Bactriane, et même à la révolte d'Arsacès I dans la Parthyæa, doivent être regardés comme une espèce de parenthèse. Clinton, in referring to the same passage, remarks, "Strabo makes the revolt of Bactria precede the rise of the Parthians. But he speaks without precision, for we know from Polybius that Euthydemus was contemporary with Antiochus; and, according to Strabo himself, the founder of the Bactrian kingdom was Diodotus." F.H. app. 315.

[b] Conf. Palmer Exercitat. &c., p. 332. Vaillant, Arsacid. imp. &c. tom. 1, p. 1, et seq. Longuer, Annal. Arsacid, p. 1, et seq. Bayer, Hist. regn. Græc.

of all the country within the Euphrates. They deprived Eucratides, and then the Scythians, by force of arms, of a part of Bactriana.

Strabo, cxi, 1.—1. The Greeks who occasioned the revolt [of Bactria] became so powerful by means of the fertility and advantages of the country that they became masters of Ariana and India, according to Apollodorus of Artamita. Their chiefs, particularly Menander (if he really crossed the Hypanis to the east, and Isamus) conquered more nations than Alexander.[1] These conquests were achieved partly by Menander, partly by Demetrius, son of Euthydemus, King of the Bactrians. They got possession not only of Pattalene, but of the kingdoms of Saraostus and Sigerdis, which constitute the remainder of the coast. * * * * *

Their cities were Bactria, which they call also Zariaspa * * and Darapsa, and many others.[2] Among these was Eucratidia, which had its name from Eucratidas, the king. When the Greeks got possession of the country they divided it into satrapies, that of Aspionus and Turiva the Parthians took from Eucratidas. They possessed Sogdiana also, situated above Bactriana, to the east, between the river Oxus (which bounds Bactriana and Sogdiana) and the Iaxartes; the latter river separates the Sogdii and the nomades.

Polybius, x, 9.[3]—When Antiochus was informed that Euthyde-

[1] Strabo speaking of the difficulty of obtaining trustworthy information regarding these distant countries elsewhere [xv. 2, 3] remarks: "Apollodorus, for instance, author of the Parthian History, when he mentions the Greeks who occasioned the revolt of Bactriana from the Syrian kings, who were the successors of Seleucus Nicator, says, that when they became powerful they invaded India. He adds no discoveries to what was previously known; and even asserts, in contradiction to others, that the Bactrians had subjected to their dominion a larger portion of India than the Macedonians; for Eucratidas (one of these kings) had a thousand cities subject to his authority. But other writers affirm that the Macedonians conquered nine nations, situated between the Hydaspes and the Hypanis, and obtained possession of 500 cities, not one of which was less than Cos Meropis, and that Alexander, after having conquered all this country, delivered it up to Porus."

[2] Ptolemy vii, 1, 46. Σάγαλα ἡ καὶ Εὐθυδημία. M. P. Vivien de Saint-Martin identifies this city with the modern Amritsir. "Etude sur la géographie grecque et latine de l'Inde." Paris, 1858.

[3] From Hampton's Polybius.

Bactrian. s. 15, et seq. p. 32, et seq. Ed. Corsin de Minnis. aliorumque, &c., s. 2, p. 31. Frœlich, Dub. de Minnis, &c., p. 35. Sainte-Croix, Mem. sur le gouv. des Parthes, *Acad. des Inscr. et B. L.* vol. L. Mém. p. 49 et 53.

mus had encamped with his whole army near Taguria, and that he had stationed a body of 10,000 cavalry upon the banks of the river Arius to defend the passage, he immediately raised the siege, and resolved to pass the river and to advance towards the enemy. Being distant three days' journey from the place * * the Bactrian cavalry, being now informed by their scouts of what had happened, ran towards the river, and were ready to attack the troops as they marched * * [the result of the engagement was to force] the Bactrians, whose ranks were already broken, to fly in great disorder. Nor did they stop their flight till they had reached the camp of Euthydemus * * Antiochus had a horse killed under him in the battle, and was himself wounded in the mouth * * Euthydemus, disheartened by this defeat, retreated to Zariaspa, a city of Bactriana, with all his army.

Polybius, xi, 8.—Euthydemus, who was himself a native of Magnesia, endeavoured to justify his conduct, and said that Antiochus had no reason for attempting to deprive him of his kingdom, since he never had rebelled against him, but had only obtained possession of Bactriana by destroying the descendants[1] of those who had before revolted. He insisted long upon this point, and entreated Teleas to mediate for him with Antiochus that hostilities might cease, and that he might be allowed to retain the name of king. He urged that such a reconciliation was even necessary for their common safety. That those wandering tribes, who were spread in great numbers along the borders of the province, were alike dangerous to them both * * With these instructions he sent back Teleas to the King.

Antiochus, who had long been desirous of putting an end to the war, acknowledged the force of these reasons, and declared himself willing to accept the peace that was offered. And when Teleas had gone and returned again many times, Euthydemus at last sent his own son Demetrius to ratify the treaty. The king received him favourably, and * * promised to give him one of his daughters in marriage, and to suffer his father to retain the name of king. The rest of the treaty was expressed in writing, and the alliance confirmed by oaths.

[1] As this passage has an important bearing on certain arguments I have yet to develope, I transcribe the original text:—Καὶ γὰρ αὐτὸς ἦν ὁ Εὐθύδημος Μάγνης· πρὸς ὃν ἀπελογίζετο φάσκων, ὡς οὐ δικαίως αὐτὸν Ἀντίοχος ἐκ τῆς βασιλείας ἐκβαλεῖν σπουδάζει· γεγονέναι γὰρ οὐκ αὐτὸς ἀποστάτης τοῦ βασιλέως, ἀλλ', ἑτέρων ἀποστάντων, ἐπανελόμενος τοὺς ἐκείνων ἐκγόνους οὕτω κρατῆσαι τῆς Βακτριανῶν ἀρχῆς. Polyb. xi, c. 34.—See also Bayer, p. 67, and a note on ἐκγόνους, in Ariana Antiqua, p. 218.

After this transaction, Antiochus, having first distributed a large quantity of corn among his troops and taken the elephants that belonged to Euthydemus, began his march with all his army. Passing Mount Caucasus, he came into India and renewed his alliance with Sophagasenus, the Indian king. In this place he obtained more elephants, so that the whole number was now 150; and having furnished his army with a new supply of corn, he again decamped, but left Androsthenes behind him to receive the money which the king had engaged to pay. He then traversed the province of Arachosia, and having passed the river Erymanthus and advanced through Drangia into Carmania, as the winter now approached, he sent his troops into quarters. P. 349.

The above complete the fragments relating directly to Bactrian history. Among the incidental notices, I may advert to Plutarch's anecdote of the distribution of Menander's ashes,[1] which has an interesting bearing upon other questions of Indian Archæology,[2] as well as to the statement in the Periplus of the continued currency of the coins of Menander and Apollodotus at Baroach.[3]

Having exhibited the materials contributed by classic authors towards the determination of the history of the Greek dynasties in Bactria, I next reproduce an abstract of the conclusions arrived at by the more prominent commentators on the general subject—from Bayer, who had to rely almost exclusively on the fragmentary passages I have just quoted—to the later writers, who have each, in their degree, had the advantage of the gradually accumulating Numismatic testimony now represented by nearly 250 different types of coins, independent of the minor varieties of each.

[1] Latin Translation – Plutarchi opera, vol. 4, p. 821.—"At Menandri cujusdam, qui apud Bactra regnum moderatè gesserat, in castris mortui civitates funus cùm pro consuetudine procurassent, de reliquiis in certamen pervenerunt, ægréque pax hac conditione coiit, ut singulæ parte cinerum ablata æquali, monimentum ei viro apud se quæque ponerent."—Hudson, edit. p. 27.

[2] Note on Topes, Prinsep's Essays, I. 165.

[3] Latin Translation.—Alexander ex his (Bactriorum) regionibus profectus, usque ad Gangem descendit, relinquens a latere Limyricam et australia Indiæ: quamobrem usque ad hodiernum diem in Barygazis veteres commeant drachmæ literis Græcis inscriptæ, titulo eorum, qui post Alexandrum reqnarunt, Apollodoti et Menandri: est etiam illa in regione ad orientem urbs dicta Ozene, in qua olim regia erat.—Vincent, Commerce of the Ancients, ii. 204; Wilson, AA. 348; J.R.A.S. xii. 46.

BACTRIAN DYNASTIES.

No. 1.

Bayer's List (1738 A.D.).

1.—Theodotus I. 255 B.C.[1] regni Bactriani conditor.

2.—Theodotus II. 243 B.C. Theodotus Theodoti f. pacem facit cum Parthis.

3.—Euthydemus 220 B.C. regno evertit Theodotum regem.

B.C. 208, Antiochus iii., Euthydemum bello petit. B.C. 205, Antiochus cum Euthydemo pacem facit.

4.—Menander 195 B.C. Rex Indiæ et Bactrianæ.

5.—Eucratides 181 B.C.

B.C. 152. Mithridates Parthus Mediam Hyrcaniam et Elymaida occupat.

6.—Eucratides Eucratidis f. 146 B.C.

No. 2.

Clinton's List (1830).

"The Greek kingdom of Bactriana was founded at the same time with the Parthian, and subsisted for about 120 or 130 years, under seven kings:—

B.C. 250 to 200.	1. Diodotus. 2. Diodotus II. 3. Euthydemus.	B.C. 200 to 130 or 120.	4. Demetrius. 5. Menander. 6. Eucratides. 7. Eucratides II.

"Diodotus or Theodotus * * then Theodotus ii., and Euthydemus, with whom Antiochus Magnus was engaged. These three kings * * appear to have occupied a space of about fifty years B.C. 250-200." Demetrius, Menander, Eucratides. * * "We may discern in these notices, Eucratides, a warlike king, the master of 1,000 cities, who was despoiled of his provinces by the Parthians, and finally lost his kingdom to the Scythians. Between Arsaces ii., who was contemporary with Euthydemus, and this Mithridates i., Justin (xli. 5) reckons two kings of Parthia, whose times would correspond with the reigns of Demetrius and Menander. Eucratides ii., in whom the Bactrian monarchy ended, appears to have been no other than the son of Eucratides I., recorded by Justin as the murderer of his father. These four last kings might extend the duration of the kingdom to seventy or eighty years longer, and might terminate at B.C. 120 or 130." Fasti Hellenici iii, 315.

[1] Parthorum primi tumultus et prima eorum epocha, 250 B.C. Altera epocha Parthici regni, 247, B.C. Arsaces Hyrcaniam occupat, 244 B.C. Arsaces contra Theodotum regem bellum parat.

No. 8.

Prof. H. H. Wilson. (1841.)[1]

Greek Dynasties.

	B.C.		B.C.
Theodotus I.	256	Philoxenes	130
Theodotus II.	240	Antialkides	135
Euthydemus	220—190	Archebius	125—120
Demetrius	190	Menander	126
Eukatrides	181	Apollodotus	110
Heliokles	147	Diomedes	100
Lysias	147	Hermæus	98
Amyntas	135	Agathokles	135
Agathokleia		Pantaleon	120
Antimachus	140		

Barbaric Kings.

Su-Hermæus, Kadaphes, Kadphises.

Mayes	100	Azilises	60
Palirisus	80	Azes	50
Spalyrius	75	ΣΩΤΗΡ ΜΕΓΑΣ, *King of Kings*	

[1] The following is a summary of the more prominent contributions to Bactrian Numismatics prior to 1840 :—

1. Köhler, Médailles greques de Rois de la Bactriane, du Bosphore. St. Petersburg, 1822; Supplément, 1823.
2. Tychsen, Comentt. Recentt. Göttingg. v., vi.
3. Schlegel, Journal Asiatique, 1828.
4. James Prinsep, Journal Asiatic Society of Bengal, 1833 to 1838. Reprinted in the edition of his Essays, London, 1858.
5. Raoul Rochette, Journal des Savants, 1834 to 1839, and 1844.
6. K. O. Möller, Göttingen Anzeigen, 1835 (No. 177), 1838 (No. 21).
7. Mionnet, Suppt. viii. 1837.
8. Lassen, 'Zur Geschichte der Griechischen und Indoskythischen Könige.' Bonn, 1838. Republished in the Jour. As. Soc. Bengal, 1840.
9. Grotefend Die Münzen der Könige von Bactrien. Hanover, 1839.

I am not aware that any of the above works require especial notice. The value and importance of James Prinsep's labours in the cause of Oriental Numismatics and Palæography are, I trust, sufficiently appreciated by the ordinary readers of the Journal of the Royal Asiatic Society. It may be necessary, however, that I should advert briefly to M. Raoul Rochette's series of Essays in the Journal des Savants, which are not so readily accessible to English students. The antiquarian and purely numismatic portion of these are fully worthy of M. R. Rochette's deservedly high reputation; but the general consistency of his classification is sadly damaged by an eccentric theory, perseveringly adhered to, regarding the origination of the Bactrian Dynasty, which he attributes to the Agathocles, (elsewhere called *Phericles;* Arrian apud Photium, lviii.), mentioned by Syncellus as the Governor of Persia, on the part of Antiochus ii., and who M. Rochette

Indo-Parthian Dynasty.

Vonones
Undopherres
Gondophares
Abagasus

Kodes
Miscellaneous Arsacidan Kings

Indo-Scythian Princes of Kabul.

Kadphises
Kanerki
Kenorano

Ooerki
Baraoro
Sassanians

Contemporary Classification.

Euthydemus.
Demetrius Eukratides.
Lysias Heliokles.
Amyntas Antialkides Antimachus Agathokles
Agathokleia Archebius Philoxenes Menander Pantaleon
Apollodotus
Diomedes
Hermæus
Su-Hermæus (?)

'Ariana Antiqua,' p. 267.

No. 4.

M. de Bartholomæi's List.

1. Défection de la Bactriane et commencement du règne de Diodote, vers 256 av. J. C.
2. Agathoclès succède à son père [Diodote 1er], vers 240 av. J. C.
3. Euthydème s'empare du trône de la Bactriane par le meurtre d'Agathoclès 215 av. J. C.
4. Pantaléon se maintient dans le Kaboulistan oriental contre Euthydème jusque, vers 214 av. J. C.
5. Guerre d'Euthydème avec Antiochus après 210 av. J. C.
6. Traité de paix, conclu avec le Roi de Syrie, vers 205 av J. C.
7. Euthydème fait des conquêtes dans l'Ariane et l'Arachoise, vers 200 av. J. C.
8. Demétrius fils d'Euthydème succède à son père, vers 190 J. C.
9. Eucratides s'empare de la royauté dans la Bactriane, Demétrius fonde une monarchie dans l'Arachoise et dans les contrées de l'Inde qui avaient été conquises par son père vers 181 av. J. C.
10. Eucratides fait pendant plusieures années la guerre à Demétrius et finit par s'emparer de ses états, vers 164 av. J. C.
11. Eucratides étend ses conquêtes dans l'Inde, vers 160 av. J. C.

identifies with *the* Agathocles of the coins, completing the association by supposing him to have been the father and grandfather respectively of Diodotus I. and Diodotus II. (J. des Sav. 1835, p. 593; 1836 p. 75).

12. Meurtre d'Eucratide, par son fils Heliocles, qui s'empare de la couronne en Bactriane, vers 155 av. J. C.

Ici commence le démembrement graduel de la monarchie, et les données historiques semblent nous manquer pour tenter même un ordre chronologique quelconque.

13. Antimachus fonde un royaume dans la Drangiane?
14. Antialcides réunit sous sa domination l'Arachoise et la Kaboulistan oriental.
15. Ménandre fonde un puissant royaume dans l'Inde.
16. Arsace VI., Mitridate 1r roi Parthe, envahit la Drangiane, vers 145 av. J. C.
17. Chûte complète de la Monarchie grecque-bactrienne, proprement dite, vers 139 av. J. C. 'Köhnes Zeitschrift,' 1843, p. 76.

No. 5.

Major Cunningham's Table.

No.	B.C.		
1	256	Diodotus I.	Bactriana (including Sogdiana, Bactria, and Margiana).
	243	Diodotus II.	
2	247	Agathocles	Paropamisadæ and Nysa.
3	227	Pantaleon	
4	220	Euthydemus—Bactriana, Ariana (including Aria, Drangia, Arachosia, and Paropamisadæ), Nysa, and subsequently Gandharitis, Peukelaotis, and Taxila.	
5	196	Demetrius—ditto, ditto; and, later in his reign, Patalene, Syrastrene, Larice.	
6	190	Heliocles—Bactriana and Paropamisadæ.	
7	190	Antimachus Theos—Nysa, Gand., Peuk., and Taxila.	
8	185	Eucratides—Bactriana, Ariana, besides Patalene, Syrastrene, and Larice, as well as Nysa, Gand., Peuk., and Taxila.	
9	173	Antimachus Nikephoros—Nysa, Gand., Peuk., and Taxila, contemporarily with Eucratides' retention of the rest of his dominions.	
10	165	Philoxenes—succeeds to Antimachus Nikephoros' kingdom.	
11		Nicias—ditto, with the exception of Taxila.	
12	165	Apollodotus succeeds Eucratides in Ariana, as well as Pata., Syr., Lar.	
13		Zoïlus	follow Apollodotus in Ariana alone.
14		Diomedes	
15		Dionysius	
16	159	Lysias—succeeds these in Paropamisadæ, and obtains Nicias' dominion of Nysa, Gand., and Peuk.; while Mithridates I. possesses himself of Ariana, having previously gained Margiana from Eucratides.	
17	150	Antialcidas—succeeds to Lysias' kingdom.	
18		Amyntas	follow Antialcidas
19		Archebius	
20	161—140	Menander—reigns in Paropamisadæ, Nysa, Gand., Peuk., Taxila, Por. Reg., Cath., Patalene, Syr., Lar.	
21	135	Strato—succeeds, with the exception of the countries of Pata., Syr., Lar., which fall to Mauas.	
22		Hippostratus	follow Strato.
23		Telephus	

24	126	Hermæus—rules over Parop., Nysa, Gand., Peuk. (The Su-Sakas obtain Aria, Drangia, and Arach., from the Parthians).
25		Mauas—has Taxila, Por. Reg., Cath., Pata., Syr., Lar.
26	105	Kadphises—(*Yuchi*)—takes possession of Hermæus' kingdom, and Taxila from Mauas (Kozola Kadaphes).
27		Vonones }
28		Spalygis } Paropamisadæ.
29		Spalirises }
30	110	Azas—succeeds Mauas, obtaining also, in 90 B.C., Nysa, Gand., and Peuk.
31	80	Azilisas—succeeds Azas in the three latter, adding Taxila, and the Paropamisadæ.
32	80	The Soter Megas obtains the dominions of Azas, and subsequently those of Azilisas.
	60	The Yuchi again possess Parop., Nysa, and Tax., &c.
33	26	Gondophares—reigns in Ariana.
34		Abdagases (and Sinnakes or Adinnigaus)—ditto in ditto, less the Parop.
	A.D.	
35	44	Arsaces (Ornospades or Orthomasdes)—ditto, ditto.
36	107	Pakores Monesses—ditto, ditto (Hiâtheleh in Bactriana).
		[36a Orthagnes.]
	207	Artemon—in Aria, Drangia, Arachosia.
		Sassanians.

"Numismatic Chronicle," vol. viii., p. 175 (1843).

No. 6.

M. Lassen's List.

Die Griechisch-Baktrischen und Griechisch-Indischen Könige

1. Die Griechisch-Baktrischen.

Diodotus I., vor 250 vor Chr. G.[1]	
Diodotus II., seit 237	Agathokles, in Badakshan und am obern Indus seit 245.
Euthydemos, unabhängig seit 245;	
in Baktrien seit 222;	Pantaleon.
Demetrios, seit 205; besiegt um 165.	
Eukratides, nach 180.	
Heliokles, seit 160; Lysias, nach 165;	Antimachus, seit 170.
Archebios, 150-140; Antialkides;	Philoxenes, um 160.
Amyntas.	

[1] Lassen had originally adopted the date 256 B.C. "Zur Geschichte, &c., 1838."

2. Die Griechisch-Indischen Könige.

Appollodotus, nach 160.
Zoïlos und Dionysios.
Menandros, seit 144.
Straton, um 124.
Hippostratos, nach 114.
Diomedes, Nikias, Telephos, zwischen 114 u. 100.
Hermaios, 100–85.

Die Indoskythischen und Parthischen Könige.

1. Caka-Könige.

Mayes, nach 120 vor Chr G.
Azilises, um 100.
Azes, seit 95.
Spalirisos, um 60.
Vonones, kurz vor u. nach Chr. G.
Spalygis.
Yndopherres, um 90.
Abdagases, von 40 bis 30.

2. Jueitchi-Könige.

Kadphises I., nach 85 vor Chr. G.
Kadaphes, und seine namenlosen Nachfolger etwa bis 60 v. Chr. G.
Kadphises II., seit 24 vor Chr. G., bis etwa 1.

3. Turushka-Könige.

Hushka oder Oerki, von etwa 10 vor bis 5 nach Chr. G.
Gushka, bis 10 nach Chr. G.
Kanishka, oder, Kanerki, bis 40.
Balan, bis 45.
Oer Kenorano, bis 60.

"Indische Alterthumskunde," vol. ii., p. xxiv., published 1852.

Antiochus Theos, in addition to the ordinary currency of the Western portion of his dominions, exhibiting the conventional *reverse* device of "Apollo seated on the cortina," seems to have issued a special currency for the Eastern provinces bearing the emblem of Jupiter Ægiochus. These latter coins are interesting, as forming the connecting link in the Numismatic history of the period—between the expiring dominancy of the Seleucidæ in Bactria and the assertion of independence by Diodotus, who continues to use the same style and device, with his own newly assumed title of ΒΑΣΙΛΕΥΣ.

This special coinage is more important, however, in its bearing upon the subsequent issues, in the connexion between the two series established by identity of Mint-monograms, especially if

these are conceded, as a general rule, to be composed of the initial and closely following letters of the name of the city in which coins themselves were struck.

At present, the number of examples I am able to cite is limited to the following combinations as figured in Prinsep's Essays Pl. xi. c., Nos. A, B, C—C*a*, combined with D, and No. 12, which last is simply the letter N.

In addition to these, a new coin of Sir Bartle Freres gives the monogram A, associated with a second mint mark, composed of an Ξ enclosed within an O.

Diodotus.

No. 1—Gold. Weight, 132·3 grains. Major Hay.

Obverse—Head of the king to the right, apparently giving the portrait of Diodotus at an early period of his reign.

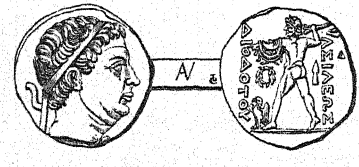
Reverse—Erect figure of Jupiter, in the act of hurling the thunderbolt; Ægis on the left arm; Eagle in front of the left foot; Chaplet in the field; no monogram.

Legend—ΒΑΣΙΛΕΩΣ ΔΙΟΔΟΤΟΥ.

No. 2—Gold. Weight, 131·3 grains. Major Hay.

Similar to the above, No. 1. Except that the head of the king

No. 2.



is more finished, and represents his features at a more advanced period of life. On the reverse field, there is an addition of a spear-head under the left arm.

The only other known gold coin of this king is in the Bibliothèque Impériale. It has been described in the "Journal des Savants," by Raoul Rochette, and noticed in Wilson's "Ariana Antiqua" (p. 218). A *glyptique* line engraving of the coin may be referred to in the "Trésor de Numismatique," pl. lxxii., fig. 4.

The silver coins of Diodotus follow the types of the gold pieces given above—figure 1 of the accompanying Plate ii is a copy of the king's head on the obverse of a tetradrachma in the British Museum.

The monograms on Diodotus' proper coins are comprised in the following numbers, as discriminated in Pl. xi., c. Prinsep's Essays. No. 1 with ⌶. No. 2 with C, *a*. No. 2, a. Mr. Gibbs has a tetradrachma bearing a new monogram, composed of an open M with the centre angle prolonged downwards.

Diodotus and Agathocles.

No. 3—Tetradrachma, weight 4 drachms, 14 grains (French). M. de Bartholomæi.[1] Fig. 2, Plate iii. Koehnes' Zeitschrift, 1843.

Obverse—Head of Diodotus to the right.

Legend—ΔΙΟΔΟΤΟΥ ΣΩΤΗΡΟΣ.

Reverse—Erect figure of Jupiter, as in Diodotus' coins.

Legend—ΒΑΣΙΛΕΥΟΝΤΟΣ ΑΓΑΘΟΚΛΕΟΥΣ ΔΙΚΑΙΟΥ.

Monogram—No. 3 Prinsep, with chaplet in the field.

No. 4—Plate ii, fig 2. A similar coin in the possession of Mr. J. Gibbs—monogram No. 4, Prinsep.

Diodotus and Antimachus.

No. 5—Tetradrachma (cast). Major Hay.[2]

Obverse—Head to the right.

Legend—ΔΙΟΔΟΤΟΥ ΣΩΤΗΡΟΣ.

Reverse—Erect figure of Jupiter, as in Diodotus' coins.

Legend—ΒΑΣΙΛΕΥΟΝΤΟΣ ΑΝΤΙΜΑΧΟΥ ΘΕΟΥ.

Monogram—AN, with chaplet.

[1] First published in 1843, by the owner, in Köhnes Zeitschrift, p. 67, pl. iii, fig. 2.

[2] An engraving of this cast may be seen in the "Numismatic Chronicle," fig. 7, plate iv, vol. ii, N.S. It may be necessary to explain how and why I venture to recognise and claim credence for a *cast* coin, that is, in effect, for a forgery. But the truth is, the not very discriminating demand by Europeans for Bactrian coins has, for long time past, stimulated the native goldsmiths and other cunning craftsmen of the Punjáb to fabricate copies of the ancient Greek originals; this is usually effected with considerable skill by a casting of silver, more or less debased, in ordinary clay moulds, produced from direct impressions of the medal to be imitated. So that the intentional forgery simply constitutes for those who would use it as an aid to history, a very close reproduction of a genuine model. The most frequent practice is to cast in silver, and, on rare occasions in gold, counterparts of the true copper coins; as the more precious metal is more suitable for the purpose, and when turned out meets with a readier sale, at prices far higher in proportion than specimens of the lower currency. This prevailing usage does not, however, debar the fac-simile reproduction of the more rare silver coins, as may be seen in the present example. Indeed, within my own limited experience, I have had occasion to examine a collection made by an Officer of H.M.S. at

Euthydemus and Agathocles.

No. 6—Plate ii, fig. 3. Tetradrachma. Unique. Mr. J. Gibbs, Bombay, C.S.

Obverse—Head of Euthydemus to the right.

Legend—ΕΥΘΥΔΗΜΟΥ ΘΕΟΥ.

Reverse—Hercules, seated on a rock, with a club in his right hand.

Legend—ΒΑΣΙΛΕΥΟΝΤΟΣ ΑΓΑΘΟΚΛΕΟΥΣ ΔΙΚΑΙΟΥ.

Monogram No. 5, pl. xi. c. Prinsep.

Agathocles.

The ordinary types of Agathocles' proper coinage comprise three varieties:—

The first, exclusively of silver—having the head of the king on the obverse, combined with a reverse exhibiting Jupiter leaning on a spear, with a small figure of Diana Lucifera in his right hand, with the legend, ΒΑΣΙΛΕΩΣ ΑΓΑΘΟΚΛΕΟΥΣ.[1]

Second, both silver and copper coins, displaying a finished and beautifully-executed head of Bacchus on the obverse, with a Panther reverse, and the usual Greek legend.[2]

Third, exclusively copper pieces, of a square form, apparently following the local Indian model,[3] having a Panther and the legend ΒΑΣΙΛΕΩΣ ΑΓΑΘΟΚΛΕΟΥΣ on the other side—with the reverse of a Bacchante and a legend in the Indian-Pali or Lât character Agathuklayēsa.[4]

Monograms, Nos. 3, 4, the mint marks found on the binominal coins of Diodotus. No. 5, which occurs on the medal acknowledging the supremacy of Euthydemus. No. 6, = AP, and the uncombined letters ΦΙ, and ΣΗ.

Peshâwur, in which were detected an absolute handful of silver casts, of various degrees of merit, all taken from one exquisite original of Agathocles' Panther type of money, which had, itself, without the purchaser's suspicion of its comparative value, found its way into a reassociation with its own family. But while pleading for the utility of *bonâ-fide* casts, which in some cases almost approach the accuracy of electrotypes, I must add, for the credit of Bactrian Numismatics, that no collector of ordinary acuteness need fear to be deceived by modern forgeries properly so called, that is, where dies have been cut for the purpose of producing new coins. Here Oriental aptitude is altogether at fault, the Eastern eye of the present day is unable to realize, equally as the hand is incapable of executing a semblance of Greek art.

[1] Tetradrachmas, pl. xiii, fig. 3. Prinsep's Essays. Pl. vi, fig. 3 Ariana Antiqua. Pl. ii, fig. 1. Journal des Savants, 1836. Pl. lxxiv, fig. 3. Trésor de Numismatique. Drachmas, J. des Sav. June, 1834, fig. 2.—A. A. vi, 4.

[2] Jour. des Sav. 1834, plate, fig. 1. A. A. vi, 5, 6, T. de N. lxxiv, 2. Numismatic Journal, vii, pl. iii, fig. 30.

[3] See Prinsep's Essays, vol. i, page 220.

[4] J. des Sav. 1835, pl. i, fig. 1. A. A. vi, figs. 7, 8, 9.

Pantaleon.

I dispose at once of the coins of Pantaleon, in sequence to those of Agathocles, as they imitate severally the lower types of the latter king, and offer but little subject for remark beyond the retention of the Indian Pali characters in the expression of the Oriental version of the prince's name.

The specimens available are limited to a unique coin of the late Mr. Brereton's, with the head of Bacchus and the Panther reverse, and the not uncommon mintage of square copper pieces, similar to those of Agathocles, having a Panther on the obverse, with the legend, ΒΑΣΙΛΕΩΣ ΠΑΝΤΑΛΕΟΝΤΟΣ—combined with a reverse of a Bacchante, and the Indian Pali name Pantalēvasa.[1]

Antimachus Theos.

The ordinary coins of Antimachus Theos are limited to a single series in silver, of which we have specimens in the descending scale, of Tetradrachmas, Drachmas, Hemidrachmas, and Oboli. These uniformily bear the head of Antimachus with the Causia, or Macedonian Hat, and a reverse device of a figure of Neptune standing, to the front, with trident and palm branch, accompanied by the legend, arranged in two lines:—thus,

ΒΑΣΙΛΕΩΣ ΘΕΟΥ—ΑΝΤΙΜΑΧΟΥ.

The king's countenance is marked, and the likeness is usually well preserved. An engraving from a Tetradrachma in the B.M. is given as fig. 4 of the accompanying plate. Other engravings may be seen in the Mionnet. Supp. viii., 466. Ariana Antiqua, pl. xxi. 12. Num. Chron., vol. xiii., fig. 2, plate, page 70.

The monograms on Antimachus Theos' coins are represented under the following numbers of pl. xi. c. Prinsep's Essays:—Nos. 8*a*, 9*a*. 23—27. 48. c. Cunningham J.A. S, B. ix., p. 872. To these must be added the new monogram AN, which occurs on the Diodotus' medals.

I have placed the above coins together, in supersession of the usual order followed by previous commentators, as they are practically combined into a single group by the three medals, which introduce such important modifications in the distribution of the entire series.

I propose to confine myself, in the present division of this paper,

[1] See Prinsep, pl. xxviii., fig. 8.
A. A.—pl. vi., fig. 11.

to a consideration of the limited number of coins under review, which in themselves constitute the strictly initial chapter of the Numismatic history of the Bactrian monarchy.

It will be seen from the various dynastic lists compiled by modern writers, that from the very commencement of the discovery of the coins, which were destined to enlarge the suite of Bactrian rulers from the seven monarchs recorded in ancient story[1] to the fifty kings, princes, or satraps, whose monetary memorials have survived to testify to the past position of the potentates whose names they bear—a difficulty was experienced in the compression, which was the most obvious idea, or the contemporary subdivision, which was the better theory—of so many kings within so confined a period of time;[2] and, as a general rule, when any synchronous classification was attempted, the process was applied not to the leading monarchs of the line, but to their supposedly inferior and less powerful successors, who flourished towards the conclusion of the Bactrian epoch. Singular to say, the new coins now described necessitate a totally opposite course, and demonstrate that three, at least of the earlier potentates, held power contemporaneously; to how many more names on the general list a like law may apply, it would be hazardous at this moment to speculate.

The highly interesting medals, Nos. 3, 4, 5, and 6, which exact a general reconstruction of the series to which they belong, present little or no difficulty in regard to their relative bearing on each other, or the effect of their combined evidence on synchronous issues, and seem susceptible of but a single classification.

Nos. 3 and 4 can only be looked upon as issues by Agathocles, from two different mints of the kingdom over which he directly ruled, in self-avowed subordination to Diodotus.[3]

[1] In this number I include Apollodotus, rejecting all belief in any 2nd Eucratides.

[2] M. R. Rochette graphically illustrates his own sense of this difficulty:—"Aux princes qui semblaient déjà trop nombreux pour l'étroit espace de temps et de lieux dans lequel ils se trouvaient pressés, sont venus se joindre une foule de rois nouveaux, qu'il faut admettre dans ce même espace et qui redoublent notre embarras, en même temps qu'ils augmentent notre intérêt. Par cette apparition inattendue de règnes dont il n'existe d' autres témoignages que ces monuments mêmes, plus d'un système de classification se trouve détruit, plus d'une conjecture, rejetée d'abord, se trouve justifiée; et l'histoire a pris, sur beaucoup de points, une face nouvelle, grâce à ces médailles, seuls débris qui nous restent de la puissance de rois qui étendirent leur domination sur une partie considérable des countrées situées au sud et au nord du Caucase indien et des deux côtés de l' Indus." J. de Sav. 1844, p. 109.

[3] On its first publication in 1843, M. de Bartholomæi interpreted the com-

No. 5 similarly typifies an acknowledgment of the supremacy of the same Diodotus by Antimachus Theos, in the government under his own immediate administration.

No. 6 exemplifies the continued retention, by Agathocles, of his local kingship, at a period when Euthydemus had to be recognised in the place of Diodotus.

The ordinary coinage of Diodotus (Nos. 1, 2, &c.,) may be supposed to have constituted the local currency of the Imperial Satrapies over which he personally presided. In the same manner the proper coins of Agathocles and Antimachus may be held to have comprised the common circulating medium of their local governments, while the binominal medals represent the *occasional* or exceptional mintage, struck with the political motive of renewing, at stated times, a confession of allegiance,[1] and, possibly, even designed to form in

bination of the types and legends of coin No. 3, as implying its issue by Agathocles after the decease of Diodotus, in posthumous honour of the latter as the founder of the Bactrian monarchy. This attribution was adopted in its leading features by M. R. Rochette, in his concluding Essay in the Jour. des Sav. (1844, p. 117.)

The assignment was, however, contested by Droysen (Geschichte des Hellenismus, Hamburg, 1843) who held, as must now be admitted, with better reason—that the relationship between the two monarchs, indicated by the medal, could only be that of contemporaneous subordination on the part of Agathocles. This new theory elicited an elaborate reply from M. de Bartholomæi (Zeitschrift für Münz, 1846), which, however clever in argument, failed altogether to show that the change from the title of ΒΑΣΙΛΕΥΣ to that of ΣΩΤΗΡ, in connexion with the name of Diodotus, necessitated the inference that he had then ceased to live.

Lassen in reviewing the various possible bearings of this piece in a somewhat involved manner, leaves the real question at issue, nearly as undecided as ever—*inter alia* "he remarks the relation of Agathocles to Diodotus I. is shown in the binominal coin. The title of Deliverer denotes the latter as a liberator of the land from foreign domination, and the absence of the title of king either shews that he no longer reigned, as M. R. Rochette supposes, or more probably, that he was no longer acknowledged as a king by Agathocles, when this coin was struck. The repetition of the Jove type on the reverse proves that Agathocles, if not Diodotus' ally, was at all events, his contemporary, and that he reigned at the same time with or shortly after him." After referring to the use of the word ΒΑΣΙΛΕΥΟΝΤΟΣ as opposed to the ordinary title of ΒΑΣΙΛΕΥΣ. Prof. Lassen proceeds to add, "its meaning could only be this, that Agathocles practically possessed royal power, and used it, but that he acknowledged Diodotus as standing in a higher position, although he (even then) entertained the idea of making himself independent. * * If this supposition be correct, Agathocles was first Governor of one of the provinces of the Bactrian kingdom, and became independent, while the rule of Diodotus still existed." Indische Alterthumskunde, 1847.

[1] It will be remarked that in each case the subordinate kings make use of

itself a special tribute-money, which, in imitation of the Oriental conception of annual offerings to the Suzerain, often of merely nominal amount, may, in these instances, have been submitted in the form of medals prepared for the purpose.

Having so far determined the purport of the coin combinations from the testimony of their own dies, it becomes needful to examine how far the result accords with extant written history; as might be anticipated from the positive facts so frequently contributed by coined money, these medals, so far from disturbing or negativing recorded evidence, elucidate and illustrate it in a most marked manner. As I have before observed, there has been a curious perseverance on the part of most commentators in restricting the number of kings who should compose the initial section of the Bactrian dynasty; indeed in following out such a received idea, attempts have been made to limit and contract the full meaning of the important passage in Polybius (xi. 8, quoted at page 114), wherein Euthydemus excuses himself to Antiochus III.; so that the word *'εκγόνους* has been distorted by an early writer from its legitimate translation of "posteros" descendants, into "subolem," —and as such its application has been narrowed into a presumed reference to Diodotus II., instead of being allowed to carry its full force as implied in the plural form of the word itself and the entire context of the sentence—"the descendants of *those* who had before revolted."

The term descendants, in the ordinary acceptation, undoubtedly presented a difficulty, especially if the persons destroyed by Euthydemus, at so brief an interval after the death of the first Diodotus, had to be understood to be only the *bonâ-fide* descendants from that one individual; but the medals now under review teach us to revert to the true interpretation of the passage, which, by their aid, may be made to throw a new light upon the whole inquiry, and to determine conclusively that the revolt of the Bactrians was not effected by any single potentate, but by a combination of the several Satraps in charge of the various provinces,[1] an

the reverse device of the Suzerain in supersession of the emblems peculiar to their own local coins.

[1] I do not wish to press an unnecessary argument into the service of a theory already sufficiently complete in itself, otherwise it might be suggested that Justin had imperfectly reproduced the sense of Trogus Pompeius, in the following passage, and that "totius Orientis populi" was primarily designed to refer to the associates of Diodotus.

xli. 5. Eodem tempore etiam Theodotus, mille urbium Bactrianarum

organization probably headed by Diodotus as Eparch, under the impulse of so much of the Eastern polity as developed the King of Kings of the Biblical record, the Rájádhirája of Indian nations, the adopted ΒΑΣΙΛΕΥΣ ΒΑΣΙΛΕΩΝ of the Parthians,[1] and the Sháhánsháh of the Persians, rather than in obedience to any practice obtaining among the Greeks; such a conclusion would possibly elucidate the otherwise obscure remark of Strabo (xi. i. 1) that "the Greeks, when they got possession of the country, divided it into satrapies."[2] Whether this arrangement resulted from an adaptive policy or not, some such subdivision and distribution would soon have proved necessary, under the peculiar topographical aspect of the country, where access and intercommunication must, at certain seasons, have been greatly restricted, apart from the question of absolute distance.

Under such a system, existing as is proved by the coins, during

præfectus, defecit, regemque se appellari jussit: quod exemplum secuti totius Orientis populi a Macedonibus defecere. 6. Erat eo tempore Arsaces, vir, sicut incertæ originis, ita virtutis expertæ, &c.

[1] The Parthian system was specially one of local kings, under an imperial chief, hence the term ملوك طوايف under which administration, subdivision was carried to such an extent, that, as Tabari tells us, in every city there was a "king" (هر شهري را پادشاه بود). The semitic *Malkin Malkâ* of the Western coins (Num. Chron. xii., 68), equally with the unique association of "Satrap of Satraps," embodies the same idea. (Jour. Royal Asiatic Soc. xi., 118. Sir H. Rawlinson's note on the inscription of Gotarges, at Behistun.)

[2] It is not quite clear to what period Strabo alludes in this sentence. The context would seem to imply a reference to a state of things existing after the Bactrian revolt; but, however, this may be, it will be sufficient for the exemplification of the political organization of these provinces to go back to the subdivision already effected at the death of Alexander the Great, and which was probably extended into far greater detail in the interval between 323 B.C. and 250 B.C. "In Ulterior Bactriana, and the countries of India, the present Governors were allowed to retain their office. The region between the rivers Hydaspes and Indus, Taxiles received. To the colonies settled in India, Python, the son of Agenor, was sent. Of Paropamisia, and the borders of Mount Caucasus, Extarches had the command. The Arachosians and Gedrosians were assigned to Sibyrtius; the Drancæ and Arci to Stasanor. Amyntas was allotted the Bactrians, Scythæus the Sogdians, Nicanor the Parthians, Philippus the Hyrcanians. * * * When this allotment, like a gift from the fates, was made to each, it was to many of them a great occasion for improving their fortunes; for not long after, as if they had divided kingdoms, not governments, among themselves, they became princes instead of prefects, and not only secured great power to themselves, but bequeathed it to their descendants." Justin, xiii., 4. See also Arrian, in Photius, ix., xcii. 2 Curtius, x. Diod. Sec. xviii. Dexippus, in Photius, lxxxii. Orosius, iii.

the rule of Diodotus, and retained as is seen, in one instance at least, under Euthydemus, who, whether from motives of policy or from approval of such a scheme of administration, clearly allowed Agathocles to retain power in subordination to the leadership he himself had achieved. Thus, with kings succeeding kings, each in his own locality, and rendering, in all probability, but irregular fealty to the suzerain for the time being, and in many cases accomplishing complete independence, Euthydemus might reasonably have had to exterminate, not only children and grandchildren in exceptional cases, but successors other than hereditative, readily comprehended in the general term of "descendants" of the various parties to the original defection from the Seleucidan supremacy.

Such, then, being the real state of the monarchical distribution under the early Bactrian Greeks, wherein three out of many potentates are found to have held contemporaneous power, instead of being spread, as was supposed, over a period of time represented by the duration of three average reigns; it is clear that all previous conjectural epochal assignments will have to be abandoned, and a satisfactory classification will have to be undertaken under a greatly modified system. It will naturally be asked, what possible data exist for such a purpose. It cannot be concealed that the new assignment demanded by the synchronous co-existence of many kings, adds materially to the difficulty of attributing to each his own epoch, and more perplexing still, under the geographical aspect, wherein, instead of the one realm of Bactria, many kingdoms have to be appropriated, and kings to be selected out of a little discriminated list, each claiming an appropriate section of country. But, on the other hand, if the mint monograms really represent the names of the cities in which the coins were struck, the grouping of any given series of the leading towns of the divisional monarchs will be checked and corrected by the more limited circle embraced, in a way that the single extensive monarchy of Bactria, including so many provinces, could scarcely have ensured.

The question that has now, therefore, to be decided is, have we good and valid reason to assume that the Bactrian mint-marks do indicate localities.[1] The parallel custom of neighbouring and

[1] Mr. Masson, so early as the year 1836 (J.A.S.B. v. 545), stated his impression that the monograms on Bactrian Coins, "might be presumed to be monograms of locality," an opinion concurred in by Professor H. H. Wilson, who speaks of these mint-marks as "denoting probably the places where [the pieces] were coined" (Ariana Antiqua, p. 223). It was reserved, however, for Colonel A. Cunningham, to make the first real effort to analyze and explain the purport

proximately synchronous dynasties would certainly justify such an inference. Certain of the Western mints of Alexander the Great, are admitted to have represented their own names under conventional combinations of letters. The Seleucidan series, though not yet proved in detail, seems to follow a like practice. The conterminous Parthians, though they commence such an elaboration of the art of moneying later in point of time,[1] adopt and continue the usage with uniform regularity, and their contact with the Bactrians is singularly exemplified in the reproduction of the identical symbols of the latter on the Arsacidan currency as the Parthian frontier advanced. The succeeding race of the Sassanians equally mark the city of issue, though no longer in monograms composed of Greek characters, but with very inexpressive brevity, in uncombined initial letters of the name, in the Pehlvi alphabet. The Arabs, who conquered their land, for some time continued to define the mints of their imitative coinage in similar Pehlvi letters, though in a less abbreviated form, until, on the introduction of the Kufic character for mint purposes, the surface of the coin bore record of little beyond the date and place of issue, which latter, to this day, forms so prominent a feature in the extensive circle of Oriental coinages that follow Muhammadan models.

I shall however reserve any more complete examination of the general question for a succeeding number of the Journal, as I find it impossible to illustrate and explain the complicated forms of the mint-monograms without engravings or wood-cuts, which there is, just now, no time to prepare.[2]

of these combinations. The results of his investigations were published in the viii.th volume of the Numismatic Chronicle (1843)—under the title of "An Attempt to Explain some of the Monograms found upon the Grecian Coins of Ariana and India." In this paper, Colonel Cunningham has given a table of no less than sixty different monograms, specifying in a comprehensive form the various kings upon whose coins the several symbols occur, and giving suggestive explanations of the reading and identification of nearly two-thirds of the entire number.

[1] Arsaces iv. Mithridates I.

[2] As this paper may eventually remain incomplete, it may be as well that I should indicate in this place, subject to the test of a more extended comparison, such interpretations of the monograms already quoted as seem reasonably encouraging.

The monogram No. 1 , which occurs on the coins of Diodotus, and subsequently on those of Euthydemus, has been read by Colonel Cunningham as TAYKIANA, which he proposed to amend into TAAIKANA, *Tálikán*, and

I may conclude these observations by intimating to those who would follow up the subject, that as regards the comparative geography of the period, we are fortunate in having lately been furnished with a most exhaustive series of essays on the subject from the pen of M. P. Vivien de Saint Martin,[1] who has further completed his researches, by examining the more exclusively Indian section of the inquiry, the result of which has lately been published[2] under the title of "Étude sur la géographie et les populations primitives du Nord-ouest de l'Inde, d'après les Hymnes Védiques."

further to associate with the *Tapauria* of Polybius (Taguria, p. 114, supra). I confess to a distrust in any such an elaborate sequence of identifications, and should prefer some more simple lection, such as NIKAIA. It may elucidate the ultimate determination of this monogram to refer No. 7*a*, which, when viewed from the right hand side of the coin, is found to present a form absolutely identical with No. 1.

No. 2*a*, , had been originally resolved by Colonel Cunningham into the name of ΜΑΡΓΙΑΝΗ, an attribution which seemed strengthened by the discovery of a variant of the same monogram, having an additional Γ at the top (No. 2 ), in this case, however, the Γ already existing in the compound became superfluous, a fact which may possibly be explained by supposing that the upper line of the square of the monogram was intended to form a portion of the letter Π, representing the initial letter of Πόλις.

Of the monograms of Agathocles, No. 6 = ΑΡ., seems to stand for the metropolitan city of the province of Arachosia, which, as in the parallel cases of ΔΡ and ΧΟΡ denoting severally the capitals of Drangia and Chorasmia, referred rather to the name of the kingdom than to the designation of the specific capital.

No. 4 has been supposed to symbolize the name of ΟΦΙΑΝΗ, but the cross line forming a T in the centre of the O, rather damages this assignment.

No. 4 (See Plate ii., coin 2) gives, with singular completeness, the forms of every letter in the word ΔΙΟΔΟΤΟΠΟΔΙΣ, which may be taken to represent some city temporarily named after Diodotus, in accord with the frequent custom of the times.

The isolated letters ΦΙ on the copper coins may possibly instruct us rightly in the initial rendering of the monogram No. 5, seen on the binominal medal of Euthydemus (Pl. ii., fig 3), which continues its combination into a third character Α, with the optional letters Ο, and Ρ.

The mint marks of Antimachus Theos commence with the new monogram ΑΝ, which may be taken to indicate either a town named after Antiochus, or a more newly designated city called after Antimachus himself. No. 8*a* seems to answer fairly for Καρτανα, and I should likewise be disposed to concur in Colonel Cunningham's interpretation of No. 27, as Διονυσόπολις if it should hereafter stand the trial of association of localities.

[1] Étude sur la géographie grecque et latine de l'Inde. Paris, 1858.

[2] Paris, 1859.

NOTE EXPLANATORY OF THE CONTENTS OF PLATE II.,

VOL. XX., J.R.A.S.

No. 1—Diodotus. Tetradrachma, p. 122.

No. 2—Binominal medal of Diodotus and Agathocles, p. 123.

No. 3—Binominal medal of Euthydemus and Agathocles, p. 124.

No. 4—Antimachus Theos, p. 125.

No. 5—Heliocles. Didrachma. Col. Abbott. Weight, 146·3 grains.

Legends— { Obverse—ΒΑΣΙΛΕΩΣ ΔΙΚΑΙΟΥ ΗΛΙΟΚΛΕΟΥ.
Reverse—Máhárajasa Dhramikasa Heliyakreyasa.

Monogram—No. 22*b*. Prinsep's Essays.

No. 6—Zoilus. Hemidrachma. Col. Abbott.

Legends— { Obverse—ΒΑΣΙΛΕΩΣ ΣΩΤΗΡΟΣ ΞΩΙΛΟΥ.
Reverse—Máhárajasa Tradatasa Jhoilasa.

Monogram—No. 60, Prinsep's Essays.

No. 7—Dionysius. Hemidrachma. Col. Abbott.

Legends— { ΒΑΣΙΛΕΩΣ ΣΩΤΗΡΟΣ ΔΙΟΝΥΣΙΟΥ.
Máhárajasa Tradatasa Diannisiyasa.

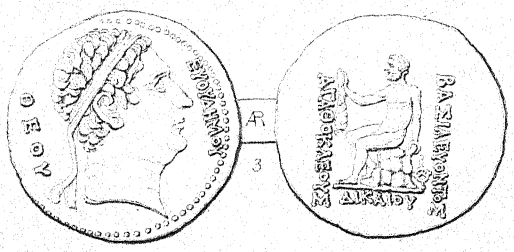
Monogram—No. 60, Prinsep's Essays.



1



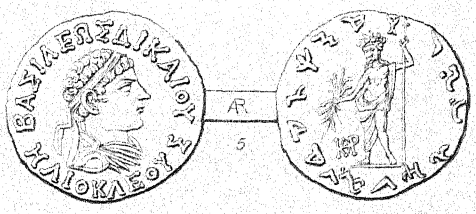
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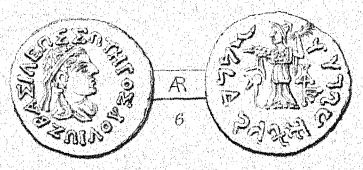
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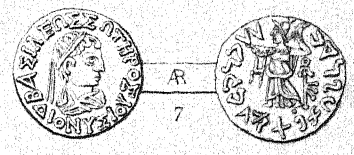
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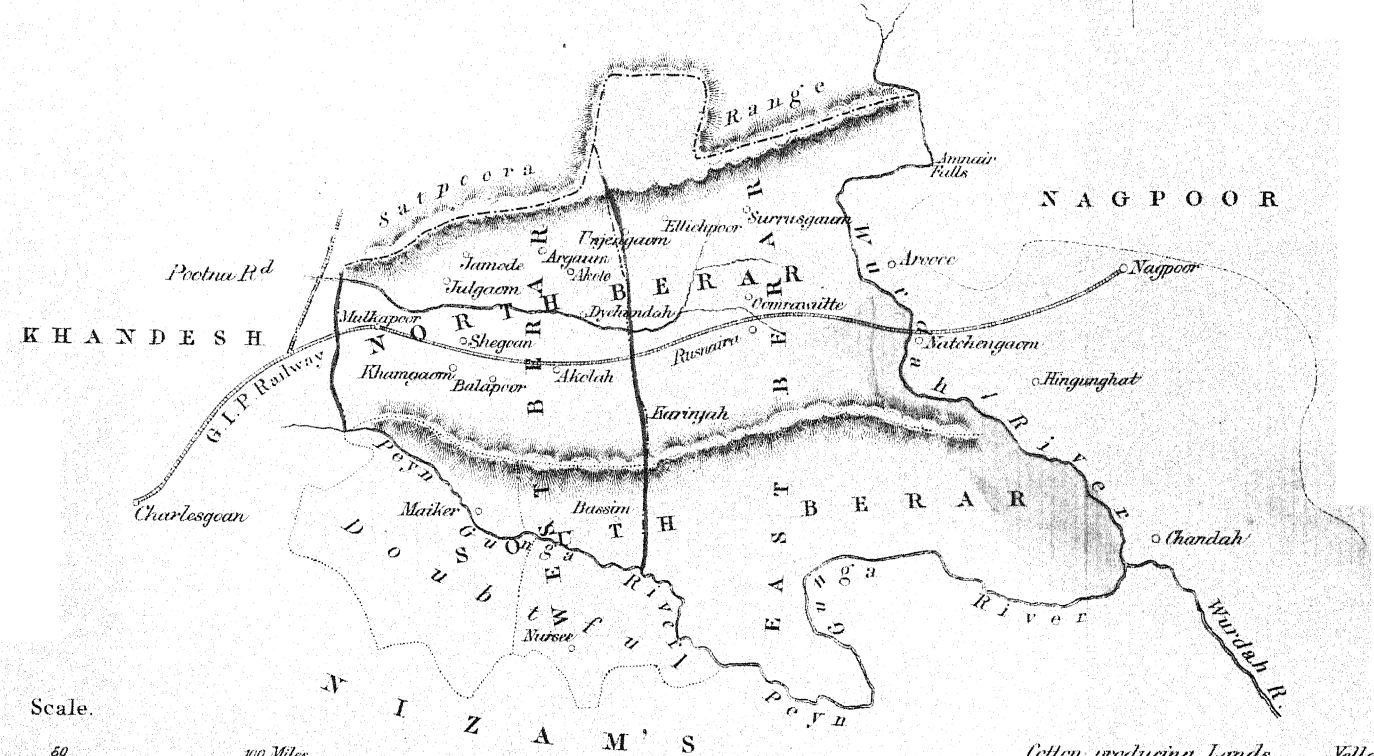


6



7

Sketch
OF
EAST AND WEST BERAR



Scale.

0 50 100 Miles

Cotton producing Lands		*Yellow*
Not Do	 *Do*	 *Grey*
Waste	 *Do*	 *Green*



ART. VIII.—*Text and Commentary of the Memorial of Sakya Buddha Tathagata.* By WONG PUH. (Translated from the Chinese by the Rev. S. Beal.)

PREFATORY REMARKS BY THE REV. SPENCE HARDY.

THERE is no life of Gótama Buddha, by any native author, yet discovered, that is free from the extravagant pretensions with which his history has been so largely invested; from which we may infer that the records now in existence were all prepared long after his appearance in this world. The Chinese work, of which the following is a translation, was written about the middle of the seventh century after Christ. We learn from "The History of the Sung Dynasty" that there was constant intercourse between China and Ceylon at this time, as well as in much earlier periods. The pilgrims from China were accustomed to take from the island relics, extracts from the sacred books, and models of the most celebrated images of Buddha. We are, therefore, prepared to discover a similarity between the mythical records of India and China, but could scarcely have expected that it would be so complete as is now proved by recent researches. The popular worship of the Queen of Heaven is one of the most striking innovations. Neither in the legends, nor in the philosophical disquisitions of the Chinese, are there evidences of much originality, so far as their translated works on Buddhism enable us to judge. They seem here to be the same unimaginative copyists that they are in works of art and manufacture.

The "Memorials" are written after the form most prevalent in India since the decline of the more flourishing ages of its literature. There is first, a short text, regarded as authoritative, and then an extended gloss or comment by a more modern writer. In the definition of terms the same rules are generally followed as in India, though with some differences of minor importance. In nearly all the works that profess to give an account of the principal events in the life of Gótama Buddha, whether written in India or China, there is the same sequence of circumstance, and the same phenomena are presented with corresponding minuteness. By both classes of

writers the incidents attendant on Sákya's conception, gestation, youth, and marriage; the four reasons for his becoming an ascetic, the manner in which he received the Supreme Buddhaship, and the success of the first sermons he preached, with notices of his earliest converts, are given in detail, and nearly in the same consecutive order. But here the record ceases to be a connected narrative, and the other events of his long life are nearly unrecorded by those who profess to be his biographers, until we come to the circumstances connected with his death, or his reception of Nirvana. In the Chinese writings there is not the same extent of exaggeration relative to the supernatural events that are said to have attended all the important acts performed by Gótama—such as the shaking of the earth, and the appearance of the gods, on almost every great occasion; but miraculous events are frequently presented by these writers in greater profusion than in the Indian legends within a more limited area. The "Memorials, by Wong Puh," may be regarded as holding the same place in relation to the legends of Sákya that the Prátimoksha, by the same translator, occupies as to the discipline to be observed by the priests; both these works throw new light upon the subjects on which they treat, and both serve as a link of connexion between Indian and Chinese Buddhism. They are also of value as stating the occasion on which many of the most important Sútras were delivered. There are incidental expressions of a doctrinal character that are contrary to the opinions received in Siam, Burma, and Ceylon, that will form matter for further investigation by the student of Buddhism.

(Obs.—In this work the figures point to the successive paragraphs of the text; after each paragraph is a commentary. I have preserved the original arrangement throughout. The Chinese work is in three volumes.—S. B.)

This work is entitled "Shik-ka Ju-loi Shing-Taou Ki," *i. e.*, "Memorials relating to the perfected wisdom of Sákya-Tathágata."

It was originally compiled by Wong Puh, one of the literati who held office in the court of Kaou Tsung (the 3rd Emperor of the Tang dynasty, A.D. 650—684). From the brief memoir prefixed to the present work, we find he was banished by that Emperor to Kwoh Chau, on account of a satirical notice he issued, ridiculing the

princes of the palace, on account of their love of attending cock-fights. The Emperor suspected this production of his to be the beginning of a seditious movement, and so, being angry, expelled him to the above locality (the present Yung Yang-hien, in the prefecture of Kái Fung, in the province of Honan).

The preface to the work before us, was written by Ming Teh, dating from the 6th year of Wan-lih, the 13th Emperor of the Ming dynasty, A.D. 1573. The notes and explanations are by Hwui Wuh Tai-Sse, written whilst living at Yueh lin Shan (Full Moon Hill).

The copy in my possession, from which the following translation is made, I took from the library of the Kwan-yin-San Temple, at the capture of Canton, January, 1858.

Introductory note (in the original).

The term Sákya is Sanscrit; rendered into Chinese, it signifies "efficient virtue," or "able to practice virtue." It is the family name of the Buddha who appeared under his apparitional form in this So-po Sakwala (obs. So-po according to Julien, is an error for So-ho, *i. e.*, the Sahalô-Kadhâton). The following is the account given in the Great Agama Sutra, respecting the origin of the term (Sákya). "In the olden times there was a wheel king (Chakra-vartti) whose family name was Kan-che-shi (He who belongs to the 'sugar cane.' Shi probably corresponds to a patronymic termination in the Sanscrit; and the name "Kan-che" is, perhaps, the same as Amba or Ambata of Spence Hardy, or Amra of Julien; the Chinese, indeed, signifies 'sugar-cane,' and the Sanscrit, 'Mango.' Vid. the legend respecting Ambapali, in Manual of Bud., p. 456, and also in Julien. And particularly, with reference to the family name being Ambatta, Spence Hardy, M B. 133). Listening to the enticements of his second wife, he was induced to banish his four sons to the north of the Snowy Mountains. These sons founded here a city, and as they governed their subjects virtuously, in the course of a few years the country became thickly populated and prosperous. Their Royal Father, on recollecting his conduct, regretted what he had done, so that he sent certain messengers to bid his sons return to their possessions; but the four sons refused to do so; on which their father, with three exlamations said, 'my sons are Shik-ka,' *i. e.*, 'strong in virtue.' Hence the family name." (Vid. this fable, somewhat differently related, in Spence Hardy, M.B. 132.)

The expression Ju-loi is the Chinese equivalent of the Sanscrit Tathágata, and is the first of Buddha's ten (descriptive) names,

It signifies, "he who has come in the right way, and perfected true wisdom."

The expression "Shing Taou," *i. e.*, arrived at complete knowledge (Bodhi) is used to signify the self-manifestation or revelation of the king of the land (Dharmavâdya, *i. e.*, Buddha).

1. I am about to declare the traditional records (lit. traces handed down as tradition) relating to Shik-ka Ju-loi.

2. With respect to his pure and universally diffused body—that, indeed, is, in its character, incapable of beginning or end.

NOTES.—Being about to record the beginning and ending of his apparitional history, the author first alludes in passing to his spiritual body (Fah Shin, *i.e.*, his essential body). Now, with respect to this essential body, what is it? It is nothing more than the substantial basis of his apparitional form—perfectly at rest and pure—universally diffused!

Sang-Chan, of the Tsin (state), says, "What we call Ju-loi is only that which is the basis of the universe (dharma dhatu, this term is of very general use, and is defined as that which the heart (soul) is capable of knowing; viz.: the universe. Vid. the work Fah kai lih.) No form can represent it—its extent is immeasurable! imperishable! unchangeable! (Obs. I believe the original is here defective). It is, therefore, said in the text, "in his essential character incapable of beginning or end."

3. But by the powerful exercise of his great compassion he manifested himself, and received life (*i.e.*, birth).

NOTES.—This clause illustrates the subject of Buddha's having a beginning and end. What the phrase "great compassion" means is this—the first and chief of the four perfect characters (heart or soul) by which Buddha is revealed [the four are compassion, love, beneficence, and blessedness (or perfection of joy)]. This great compassion is, as it were, the bottom root of the reason of Buddha. It manifests or exerts itself in destroying sorrow. This employment is, as it were, the delight (fruit) of Buddha. Hence it is called "great."

The word ün (this word has a comprehensive meaning—it signifies the power of a strong vow or prayer), used in the text,

means "mighty constraining force." The word lih refers to the 10 lih, *i.e.*, the 10 Paramitas. Hence, because all the Buddhas possess such wondrous compassion, they could not remain in a state of nirvana; and because they possess such infinite wisdom they could not remain in a condition of life and death; because they were so powerfully constrained (by compassion), they passed from the state of true existence to that which is false, and assumed a body; hence the text says, "manifested himself and received life."

4. Resting for a time in the To-si-to heavens (Tusita).

NOTES.—To-sz-to, otherwise To-shi-To in Chinese, signifies "sufficiency of knowledge." This is the 4th heaven of the world of desires (Kamadhâton). The Nirvana Sutra says, "This is the most excellent of all the heavens in the world of desires, and is, therefore, the resting place of the Bo-sat (Bodhisatwas). All of them are manifested by being born in this heaven before going to teach all sentient beings in an apparitional form.

5. Being (known there) as Ü-ming Bo-sat (? Uchadhwadya[1]).

NOTES.—Ü-ming—this is, as it were, the ground-cause of Sákya Buddha. During this Bhadra Kalpa, in ages past when men's life extended to 20,000 years, then Kasyapa was Buddha; and when he predicted that (Sákya) should come and perfect reason, he assumed the name we are considering, and then he was born in the Tusita heaven. So he adopted and used this name just as Maitreya now does. Bo-sat is a Sanscrit word, which, written in full, would be Bodisatwa—it signifies "(he who has) wisdom and (at the same time) lives." The common contraction of this word is Bo-sat.

6. He descended to the country of Ka-pi-lo [Kapila Vastu].

NOTES.—The Sanscrit word Ka-pi-lo-su-to is equivalent in Chinese to "the city of preeminent virtue (or the preeminently virtuous city)." It is the same as Central India.

7. Assuming the title Yih-tsai-i-shing (the perfection of all systems. Sarvartasiddha).

NOTES.—The Sanscrit is Sah-po-pi-ta-sih-ta (Sarvatasiddha—Observe that the text is wrong, and, as Julien says, it ought to be Sa-po-ho-la-ta-si-to). This is the very first of Sákya Buddha's

[1] Prabâpâla Bodhisatwa, J., iii, 487.

little names (*i.e.*, names assumed before arriving at manhood). Contracted it becomes Sih-ta (Siddhartha). The Sui-ying Sutra says, "At the time of Buddha's birth in the royal palace, in the very centre country, and of the Shik family (Sákya), there were, at the same time, born 500 male children, 500 foals of horses and elephants; in the midst of the palace 500 treasures came to light; in the midst of the sea 500 merchants received precious freights, and, returning, each presented (Buddha) with distinguished offerings. His father beholding these valuable offerings therefore gave him this name.

8. The Deva Kin Tün (golden mass) choosing his family.

Notes.—The Pun Hing Sutra (Lalita vistara) says, "Ü Ming (*i.e.*, Purucha or Uchadhwadya)" calling the Deva Kin Tün, said, "From olden time, all the Bosat who dwell in this heaven, awaiting their birth, when about to assume their human form must select a family conspicuous for sixty eminent qualities—pure for three generations. Descend, therefore, to Jainbudwipa, and examine for me such a family." Kin Tün replied, "The city of Ka-pi-lo, the king named Tsing-fan (Çuddhodana), his wife named Ma-ye (Maya), through all their generations perfectly pure and eminently endowed, of great renown; in this family may you be born." Ü-Ming replied: "Good! I am resolved to be born there."

9. (The illustrious) Tsing-fan (*i.e.*, pure food, or çuddhodana), was his father.

Notes.—In Sanscrit, this is Shan-to-to-na (Çuddhodana).

10. A gemmous elephant, (like a) moving sun,

11. Manifesting itself, came and took up its abode in the womb of Tai Shuh (great delusion, *i.e.*, Maha Maya).

Notes to 10 and 11.—From the beginning to the end, there are eight signs which distinguish the incarnation of Buddha.—1. That of his coming from the Tusita heaven.—2. His being born in the Lam-pi-ni (Lumbini) garden.—3. His going out of the four gates to observe.—4. Leaving the city, becoming a recluse (Prajavaka).—5. Practising asceticism in the Snowy Mountains.—6. His struggle with Mara, and arriving at perfect reason under the Bo-Ti (Bodhi) tree.—7. Turning the wheel of the law in the park of deer.—8. Arriving at Nirvana under the So-lo trees (Salas). That mentioned in the text (10) is the first work.

The Po Yau Sutra says: "Now why did Bosat take the form

of a white elephant to enter the womb? Because, of the three kinds of animals (sheep, horse, elephant) who cross a river, the elephant alone touches the bottom (alluding to Buddha crossing the stream of life).

NOTES to 11.—The Sanscrit Maha Maya is equivalent to the Chinese "Tai Shuh" (great delusion); she was the mother of Buddha. She was the eighth daughter of Shin-Kioh, the king or ruler of the city Tin-pi (vid. an account of Maha Maya's descent, Manual of Buddhism, pp. 136—137). A Rishi (seer or sorcerer) predicted that she would become the mother of a Chakravartti, on which Çuddodhana took her as his wife. The Pun-Hing (Lalita Vistara) says: "The Lady Maya dreamt that she saw a white elephant, bright as the sun (or surrounded as it were with a sun) come and enter her right side. On telling this to the king, he summoned a seer, and asked him (saying, what means this dream?) He replied: "The woman who has dreamt this, must necessarily become the mother of a Chakravartti.

If it be objected, with reference to this account, that the Sutras say that for 91 Kalpas Bosat had not entered any of the evil ways, *i. e.*, as a beast, asura, or demon), how then, in this very last manifestation, did he appear as an elephant? To this the Pi-cha (Vibacha) Shastra replies: "The narrative of the text is not literally true; but as in that country they worship the sun, and honour the elephant, so all those who dream on those things are considered fortunate." Hence, the verdict of the seer. Again, it may be asked, "Is it possible, in this very last appearance of Bosat he should assume a body born from the womb? to which we reply, the Fah-Yan Sutra says: "It was on account of his desire to complete his intention of delivering all sentient beings, and not for the purpose of securing their worship and reverence, that he assumed his apparitional form. His eminent merit and complete wisdom, accrues not from any amount of preparation (but from his very nature)—he, therefore, assumed this corporeal form, when he manifested himself." Again, it (*i. e.*, the Fah Yan) says:—"Bosat, dwelling in the womb of his mother, sat upon a precious dais, as it were in a mansion of Heaven, went, remained, sat, and slept without causing her the least pain or sorrow. Three times every day all the Buddhas of the ten regions, entering in, remained with him to express their sympathy, and conversed on the subject of his receiving birth—whilst the Bosat, of similar grade, of all the ten regions, entered in likewise, to hear the law."

But all this is mere fiction.

12. Constituted a king of the golden wheel (or, The golden wheel constitutes him a king).

NOTES.—There are four sorts of wheel kings.—1. An iron-wheel king, who governs one empire.—2. A copper-wheel king, who governs two empires.—3. A silver-wheel king, who governs three empires.—4. A golden-wheel king, who controls four empires. He possesses seven precious things. What are they? 1. A golden wheel.—2. A generous woman.—3. The horse.—4. The elephant. —5. The treasure-ruling spirit.—6. The ruling soldier minister.— 7. The Ju-i (magical) jewel.[1] These seven things the sacred king receives on the day of his consecration—all seem to come out of empty space; then, ascending, they traverse through the four empires. All men beholding the golden discus flying in advance, submit themselves willingly to the ministers. The Pun Hing (Lalita Vistara) says, "When the heir apparent was born, all the sooth-sayers, from the thirty-two signs on his person, predicted that he would become a holy Chakravartti.

13. Beginning his life (cho'ng tan, *i. e.*, dating his birthday) in (the place) beneath the Mo-yan tree (Sala).

NOTES.—This is the second work, viz.: that of his birth in the Lam-pi-ni (Lumbini) garden. The Sui Ying Sutra says, "The royal lady Maya, her time of gestation being completed, wished to proceed and walk in this garden. When she arrived, she immediately stretched forth her right hand, and grasped a branch of the Mo-Yan tree; and from her right side was born the royal prince. The king of Heaven (*i. e.*, Sakra) received him respectfully in a costly robe, and swathed him therein, whilst the Devas held over him a golden-handled parasol. All the dragon spirits scattered fragrant flowers around him, amidst the sound of drums and other music. The great earths of the ten regions trembled and shook six times, whilst the thirty-two great wonders appeared." (For an account of these wonders, vid. Manual of Bud., p. 143).

These wonders are not mentioned much in our records; yet, in the treatise called "Kam Ku Lun" (*i.e.*, discourse on things new and old), under the head "Records of different events of the Chan dynasty," we read, "in the 24th year of the reign of Chaou Wang (1028 B. C.) of the Ki Chaou dynasty (Chaou is a general title of this dynasty), the 8th day of the 4th month of the Kiah Yin year, all the rivers, brooks, fountains, and wells over-

[1] Vid. Lalita Vistara, Cap. iii, and Man. of B., p. 127.

flowed; the very beds of the mountain rivers were shaken; the fixed stars ceased to shine; whilst in all the sky appeared gleams of light, composed of the five colours. (Observe that I have translated this as if it alluded to the constellations or divisions of the sky; also in the sentence above instead of 'the very bottom of the mountain streams' we may render it 'the mountain torrents and the starry heavens were shaken'). The king, having enquired of his assembled ministers the meaning of these wonders, the Tai-Sz' (chief historian) Su-Yan, respectfully said, 'There is a holy man born in the western heavens; after 1000 years his doctrine shall extend to his country.' The king ordered this to be recorded on a tablet, and placed for memorial in Nan Kan (either the place where the sacrifices at the Solstice were offered, or generally 'the region of the south')."

14. Adorned, as to his person, with the eighty sorts of excellencies—lovely as the Fan flower (Pundarika).

NOTES.—The Pi-cha Lun (Vibacha Shastra) says, "The eighty sorts of (inferior) beauties, residing amongst all the other tokens, compose what is called the 'chwong yan' ('perfectly lovely.' Is this the same as the garden of Miçraka?—vid. Lalita vistara 56—86 passim) body of Buddha." The Fan flower—this word is Sanscrit—written in full it would be Fan-to-li (Pandarika) flower, *i. e.*, the white Lotus. The Nit-Pun King (Nirvana Sutra) says, "The body of Buddha had none of the impurities natural at birth—but was like the white lotus flower in its very nature—pure and calm."

15. And with the thirty-two (superior) excellencies the proper marks of a great seer. Bright as the full moon!

NOTES.—The Nirvana Sutra says, "Exhibiting (in his person) the thirty-two superior marks of beauty, and so in himself complete (chwa'ng yen). Like the full and rounded moon of the 15th evening of the month."

16. (Then facing) the four quarters, he took seven steps each way.

NOTES.—The Sui-Ying Sutra says, "At the time when Bosat was first born he required not any one to hold him; but, looking towards the four quarters of heaven, he took seven steps each way. A lotus, of its own accord, sprang up beneath his feet." The Fah Yen Sutra says, "(He did this) because there was no one to be seen in the world in any way comparable to him." The Kin

Kong Sin Ki (Diamond Rishis' Record) says, "Juloi, in exhibiting his power of locomotion, adopted three methods.—1. By his spiritual power going through the air.—2. By walking on lotuses which sprang up voluntarily under his feet.—3. At the time of walking raising his feet above the ground about the height of four fingers, and thus moving whilst a thousand luminous circles of light issue (or display themselves) beneath on the earth (lit. like scales on the earth)."

17. Whilst nine streams of water uniting bathed his body (lit. his one body).

NOTES.—The Po Yan Sutra says, "At the time when Bosat was born, the nine dragons dwelling in space caused a fine and gentle rain to fall, neither too hot or cold, to refresh the body of Bosat."

18. Then also appeared the Yan-Tam flower (Udambara).

NOTES.—The Yan-Tam-Pat-lo flower (*i.e.*, the Udambara flower, ficus glomerata, Lalita Vistara, p. 106, 2) appears whenever a golden-wheel king is born. Because it is very seldom seen in the world, it is said, therefore, to be "difficult to see;" so also is it difficult to live exactly when a Buddha is born. And so the Pun Hing Tsah (Lalita Vistara) Sutra says, "A-sz-to" (Asita), the Rishi, addressing the great king (Maharaja) said, "As the Udambara flower throughout immeasurable ages is not seen in the world; so also is it with regard to the appearance of a Buddha." The Nirvana Sutra says, "To be born just when the Udambara flower appears (we may well) believe to be difficult."

19. As he uttered with the voice of a lion

20. These words, "There is now a clean end of human births (births from the womb). Soon, indeed, shall I attain the immutable body."

NOTES to 19 and 20.—The Yan Kwo Sutra says, "At the time when the royal prince (Kumararaja) was born, with one hand pointing to the heaven and one to the earth, he uttered the voice of a lion, and said, 'Above and below Heaven I only am The Honourable One (Arya).'" Now the lion amongst other animals is accounted the king, and his roar is attended with four consequences. —1. All the other beasts hearing it quake with fear.—2. The musk elephant (Gandhahasti, vid. Jul, iii, i) falls down, and is subdued with fear.—3. All birds on the wing fall down.—4. All animals

living in the water seek to hide themselves. So also the voice of Buddha is much to be regarded, and is attended with four consequences.—1. The voice of Buddha declaring the law, all (other) laws (or substances, Dharma) come to an end.—2. Mara is subdued.—3. Heretics and opposers of the truth fall down and are overcome.—4. All troubles, distresses, and anxieties disappear. So the comparison used in the text holds good with reference to the proclamation of the law.

NOTES to 20.—His "immutable body," *i.e.*, his universally diffused and essential body (Dharma Kâya). The Fah-Hoa Sutra (Lotus of good law, Saddharma puṇḍarîka) says, "Juloi having arrived at perfect possession of the condition of Buddha, long since, what need can there be of any further births—receiving no after-substance, how can he be born?"

21. Returning and coming as I have for the purpose of saving men (sentient creatures), how shall I bring to an end the traces of my apparitional births?

NOTES.—This is what is called the great compassionate heart of all the Buddhas. For as there is no bound to created beings or worlds (or classes of created beings), so the love of Buddha is inexhaustible. It was on this account, therefore, viz., to save the world, he came amongst men. Now it may be asked, "Buddha having completed his reason (perfected reason) long ago, and being in his own nature self-existent (Ishwara or Swabava), why did he not content himself by sending a being born in the apparitional way to forfeit reason (on this occasion)? Why did he use the plan of being born from the side, as the womb?" To this we answer, the Tai Shen Ki'uen Sutra says, "If Buddha had wished not to be born from the womb, and arrive at perfect wisdom, for once he feared lest his earnest intention to deliver all creatures would be ineffectual; lest men, doubting the truth of this apparitional appearance, should be unwilling to receive instruction. And if he had been born as a poor man, then (they would say) 'it were easy for him to become a recluse; to avoid hunger and cold (he did this).' And so, when he manifested himself he entered the womb, and was born in a king's palace, with an abundance of every sort of agreeable delights; nevertheless, he afterwards became a recluse."

22. Thus wrapped up once more (lit. returning to his lodging-house, *i.e.*, his body) in swaddling clothes, he was manifested as a little child.

NOTES.—The Nirvana Sutra says: "The body of Juloi is the same as his essential and universally diffused body, not that sort of body which consists of flesh, bones, blood, &c. But in order to fulfil the laws of all sentient beings (or rather to comply with the laws which constitute a sentient being), he manifested himself as a little child. The expression 'Ying 'rh' refers to his sucking the breast as a little baby."

23. Then came the casting his horoscope! Alas! for the grief of Ho-sz'-to (Asita), the Rishi!

NOTES.—The Sanscrit Ho-sz'-To, corresponds to the Chinese "incomparable" ("mo pi"). This was the name of a great Rishi of the western regions, who possessed the mirror for distinguishing the destinies of men. The Pun Hing Sutra (Lalita Vistara) says; "Çuddhodana summoned Asita, the Rishi, to cast the horoscope of the prince royal. The Rishi appeared choked with grief, on which the king asked why he was so sorrowful? to which he replied, 'the royal prince possesses the thirty-two superior signs, and the eighty inferior ones, which makes it manifest that this child will be no Chakravartti;' but it is certain, that becoming a recluse (Prajawarka), he will perfect reason as Buddha, and turn the wheel of the law! What joy for all the world of sentient beings! But as for me, now an old man (ki—an old man upwards of sixty), I shall not see the flower of the law! (or otherwise 'the apparitional form of the law'). Deprived of this great benefit, I am, therefore, sorrowful and downcast!"

24. And when he went to worship at the ancestral temple, what reverence did he receive in the shrine of Tsz' Tsoi (Mahiswara).

NOTES.—The Sui Ying Sutra says, "Çuddodhana Raja, riding in his chariot with the royal prince in his arms, went to worship at the shrine of Maha Iswara Deva. Then all the figures of the gods rose up everywhere, and did obeisance to the prince, bowing at his feet. His royal father, astonished at the sight, exclaimed: 'My son, in the midst of the gods, is even more excellent than they;' his fitting title then is, 'Tin chung Tin,' (a Deva amongst Devas)." This is the same as Buddha's second little name.

25. And so he grew up to be a youth.

NOTES.—The Fah Yen Sutra says: "He manifested himself in

the condition of a young man, because he would accomplish throughout all the different conditions of humanity.

26. And learnt the Shing Ming (*i. e.*, the Vyâkaraṇam of Panini, or the Çabdavidyâ. Vid. Jul. ii, 73.)

NOTES.—The great works of Indian literature include five Ming (*i. e.*, scientific treatises) viz., Shing-ming (treatise on sounds, Çabdavidyâ). (2) Kung Kian Ming (treatise on mechanical arts, Çilpasthanavidyâ). (3) I-fong-ming (treatise on medicine, Tchikitsâvidyâ). (4) In-ming (treatise on causes, Hêtonvidyâ). (5) Nü-ming (treatise on interior things, Adhyâtmavidyâ). Now, this Shing Ming (Çabdavidyâ) is mentioned, because it is usual in India for a child who has displayed considerable talent, to begin to study it. The royal prince, indeed, studied all the treatises, but this one is particularized because it includes, as it were, the others.

27. And with what success he practised the military exercises, let the "Arrow Pagoda," and the "Arrow Well," declare!

NOTES.—The instructor of the prince royal was Tche'en-Tai Ti po (Tchanda Deva?), that is, "Yan Tin" (or "Patient Deva"). With respect to his learning the military arts, the Lalita Vistara says: "The royal prince, when he was fifteen years old, contended with all the Sakhyas in various athletic sports; one arrow perforated and passed through seven golden targets (drums); another arrow penetrated seven iron blocks. These arrows, passing through the targets, went beyond them, and stuck in the earth, and forthwith, from the spot where they were fixed, gushed forth wells of water. At the same time, the god Sakra took the arrows and conveyed them to the To-li heavens (the thirty-three heavens, Trayastriñças), where he carefully preserved and reverenced them, raising a pagoda over them—this is the first of the four pagodas erected in those heavens for similar purposes. The well which sprang forth is by men called 'the arrow well.'" The Si-yu-ki (written by Hiouen Tsang) contained in the three pitakas belonging to the Tong dynasty states: "The arrow well is 30 li S.E. of the city of Kapila-vastu. The water is sweet as nectar to the taste; those who are sick are restored by drinking it; and it is useful for this purpose to the present day."

28. And what strength he displayed in seizing animals; the traces of the elephant left on the ground, and the ditch, are standing proofs.

NOTES.—The Sutra says, "The royal prince, with his brother (or cousin) Lan-To (Çundrananda) and Ti'n Ta (Devadatta), leaving the grounds after the athletic exercises, Devadatta going in front saw a great elephant standing in the gateway (of the arena); so, hitting it with his hand, he killed it. Next, Nanda coming out saw the elephant lying in the road, and, seizing it with his hand, he drew it on one side. Afterwards the prince royal came out and saw the elephant (still lying there); so, using his left hand, he raised it up, and, with his right hurled it away: the elephant fell outside the city, and where it fell indented the earth; and so it is called, and the text mentions, the Elephant Ditch (Hastigarta) (Jul. ii, 313, 314)."

29. Thus for ten years he revelled in all the pleasures of indulgence!

NOTES.—These pleasures (desires) are results of the five dusts, viz.: form, sound, scent, flavour, and touch. Those who inhabit the world of desire enjoy every pleasure they covet. The Lalita Vistara says, "The royal prince, in his palace, had each of the five sources of pleasure; for ten years, amidst every species of enjoyment, he left not the palace." Hence the words of the text.

30. But now he shewed himself taking a tour of observation from the four gates.

NOTE.—This is the third of the principal events of Buddha's life, and is the cause of his becoming a recluse.

31. (When he beheld) the Sha-mun with a pleasant expression, and the begrimed old man, the leper, and the corpse.

NOTES.—Sha mun (Çramana) is a general term for disciples that have left their homes. The Lalita Vistara says, "The royal prince, enjoying his pleasures in the midst of the palace, still earnestly desired to go forth and roam through the pleasure gardens; whereupon the king ordered the public thoroughfares to be adorned and cleaned, and the places of repose (kün) in the garden to be ornamented throughout; he selected also a prudent minister to attend on the prince for the purpose of answering whatever he might ask. First of all, going out of the east gate, a Deva of the pure abode transformed himself into an old man—withered and emaciated, supporting himself with a staff. The royal prince seeing him, asked the attending minister, 'Who is this man?' to which he replied, 'This is an old man.' Again he asked, 'What is this phrase, 'an

old man?' To which he replied, 'Formerly strong and hearty; by the alternation of heat and cold, the blood and humours dry up, and change—all men born in the world must come to this condition of old age.' Next they went out of the south gate, when the Deva transformed himself into a leper. The prince asking the minister with respect to this, he replied, 'This is a leper—a man indulging his appetites without restraint—drinking, and eating beyond bounds, the four great (elements) not being in harmony, changing and transforming themselves, bring about a complete state of sickness; he is ever suffering from pains and aches without help. No man born in the world can escape such consequences.' Next, going out of the west gate, the Deva transformed himself into a corpse. The prince again asked the minister with respect to this object; he answered, 'This is a dead man; the number of his years being now completed, and the animal spirits exhausted, the four elements all separate, the six senses have no perception; then neither father, mother, wife, nor son—be their love ever so great—can detain the object of their affection. Rich and poor, learned or ignorant, all must die!' The prince reflecting on what he had heard was deeply pained; and turning his chariot, went back to the palace." But it may be asked, "The Sutra says that the king ordered them to cleanse and purify the roads and avenues so that there should be no stones or rubbish of any sort left as an impediment. How was it then these objects, the sick man and the corpse, appeared before the chariot?" We reply, the Lalita Vistara says, "The Deva of the pure abode concealed himself in his transformation, so that only the prince and the minister saw him; and the very proper replies of the attending minister were all owing to his divine influence." It may be asked again, "But what have Devas to do with men, that they should transform themselves for such purposes as these?" To which we reply that all the Bosat living amongst men under different forms ever surround and protect the virtuous. [This is the sense of the paragraph.] And it was by their influence that the royal prince was disgusted with the pleasures of the palace, in order that he might not be unmindful to become an ascetic. But, finally, the royal prince going out next from the north gate, the Deva of the pure abode transformed himself into a Shamun, holding his staff, and carrying his alms bowl; composed and collected he walked before the chariot! The prince then enquired, "What man are you?" To which he replied, "I am a Shamun—a disciple of Buddha." He asked again, "What word is this—a Shamun?" To which he replied. "The three worlds (Kamaloka, Rupaloka,

Arupaloka), how full of sorrow! the six paths, how dark and sad! Knowing this, and going to the very bottom of his spiritual nature, he is called a Shamun;" and speaking thus he disappeared in the void! The royal prince, looking after him, respectfully and yet joyously, exclaimed, "This only is happiness! I will seek out this wisdom." And so he returned to the palace.

32. Whereupon the Deva Tso Pong (? Dharmachari, Lalita Vist., 196) in order to excite him to wisdom, exhibited to him the unbecoming appearances of the dancing women.

NOTES.—The prince royal, thinking day after day of the joy and the disgust he had experienced, owing to the various sights he had witnessed when going out of the four gates, his father, the king, on the same account increased the pleasures of his palace, in order to fascinate him. (In this state) in the middle of each night a Deva of the pure abode, called Tsau Ping (Dharmachari?) caused him to hear words of encouragement and direction, he himself (*i.e.*, the Deva) dwelling in emptiness (*i.e.*, being invisible); and moreover caused those means of delight he used to render him no pleasure; (he caused him also to hear) of the impermanency of worldly joys, of the rest of Nirvana; the sound appearing to come, as it were, from a long way off. At last he caused all the dancing women to be affected with an overpowering sleep, their garments all thrown about and disordered, their positions revolting and unbecoming; and so the royal prince passing by and seeing them all in this condition, his disgust was doubled.

But, it may be said, Ju loi, dwelling in the purely spiritual world, in his own nature of compassionate love, when he manifested himself among men, why did he indulge in these pleasures, or why did he hesitate until he heard this voice of the Deva? why did he depend on such expedients as these? or in what way did he differ from ordinary sages? The answer to this is, that he did all these things in order to conform throughout to the condition of humanity. The (Tai Fong Tang) Mo Seung Sutra says: "If we say the Juloi was truly born in the king's palace, and passed through the eight conditions before arriving at perfect wisdom, this would be to abuse Buddha (Juloi)."

33. The Deva of the pure abode, by tightly grasping and waiting in attendance, restrained the prancing of Ku-nik (Kaniku) and the glittering chariot.

NOTES.—This is the fourth circumstance or sign in Buddha's

history, viz., going out of the city to become a recluse. In reference to this, the Great Development School (Tai Shing) says, that he had now arrived at the age of 19. Ku-nik (Kanika) is the name of the royal prince's charioteer (it should be rather "his horse;" for Chandaka was his charioteer). The Lálita Vistára says: "The prince frequently spoke to his royal father on his intention to become an ascetic; to which his father replied: 'You ought, my son, to become a Chakravartí, possessing the seven great treasures and the 1,000 sons (? vid. L. V. 249), ruling over the four empires. What pleasure can there he in the shaven crown, and the soiled robes of an ascetic?' The royal prince answering said: 'How can we compare an empire over four continents, and the possession of seven precious substances and the 1,000 sons, with the attainment of perfect wisdom, the government of the great chiliocosm, command over apparitional births in the four orders of being (viviparous, oviparous, from spawn, and apparitional)—power to bring forth the long night (? Nirváńa)?' The king then doubled his guards in the streets, and added new pleasures to his palace, to engage his attention day and night. One night, however, the Déva of the pure abode spoke out of empty space, and said: 'Would you go! this is the time!' summoning Ku-nik (this must be Chandaka) to prepare his horse, the royal Kin-ching (Kanika), and await the royal prince coming to mount him, (as he did). Four yakshas support the horse's feet; Dévas bring precious substances. Brahmá takes his place on the left, Śakra on the right; the four heavenly kings going through the streets, caused the gates of the different guards (Kwoh kung—palaces of the land) to open of themselves, and the guards themselves to know nothing of it; and so, travelling through the air, they went on, till they arrived at the middle of the forest of the ascetics in the Snowy Mountains, having passed over 800 li."

The Fah Yen Sútra says: "Bosat in his very last manifestation proclaimed the law in this way, wishing to cause all those who were attached to the world (their family or house), to let go and leave the world (*i.e.*, to become ascetics), and obtain a knowledge of the self-existent. He, therefore, gave up these things, and manifested in himself the great excellency of becoming a recluse." This, then, is the exhibition of his leaving his home (and entering on the life of a pravrajaka).

34. Leaving the city at the beginning of spring (? literally the

"Spring city," or it may be the "Spring gate or wall"), on the eighth evening.

NOTES.—The 8th day of the second month, in the middle of the night, he left the city and his home. U Lun Wang (?) says, "in the reign of Chaou of the Chow Dynasty, the 42nd year—the cyclic title being Jin Kiah."

35. Sojourning in the Snowy Pass for six years.

NOTES.—This is the period he dwelt with the ascetics in the Snowy Mountains.

36. Oh! the feelings (heart) of the man departing and grieving for his much loved lord (or grieving to leave, &c.)!

NOTES.—The man spoken of is the charioteer Ku-nik (Channa or Chandaka). The Lálita Vistára says: "The prince having arrived at the Snowy Mountains, spoke thus to Chandaka: 'Go now! go with the horse Kanika; difficult as it has been, you have been able to accomplish it. Now then return to your country.' Chandaka, full of grief, replied: 'Who! who shall teach me now, returning alone to within the palace!'"

37. The horse, licking him with love, letting fall a succession of pearly tears.

NOTES.—The horse, Wong Kin Ching (Kanika), hearing the words of the Royal Prince, kneeling down, licked the foot of his master, weeping immoderately.

38. Wielding his precious sword, than fell the rosy locks around. A pagoda was raised in the heavenly mansion!

NOTES.—The Lálita Vistára says: "The royal prince, himself with his precious girdle-suspended sword, and using his left hand to grasp his rosy (blue) locks, cutting them off, made this vow: 'I now cut off my hair and vow to save and rescue men from the sorrows and anxieties which now oppress them, and to remove and destroy the obstacles that oppose their advance in virtue!' Throwing his locks into the air, Śakra, seizing them, carried them to the To-li heaven, and erecting a stúpa over them, paid religious veneration. This is the second of the four heavenly pagodas!"

39. Taking his royal garments in order to exchange them for leathern raiment, he became in form like one who waits among mountain deer!

NOTES.—The Lálita Vistára says: "The royal prince reflecting that his garments were not such as became a recluse, at the same time the Déva of the pure abode, transforming himself, appeared as a hunter, clothed in a torn ka-sha robe (or throwing open his ka-sha). The prince perceiving him, took off his valuable robes and exchanged them for those of the hunter; then joyfully exclaimed, 'Now I have begun, indeed, the life of an ascetic.'"

The ka-sha is a robe of a non-conspicuous colour, and therefore one which becomes an ascetic. The hunters also of the western regions wear a robe of similar colour, because the Shamuns who frequent the mountains where they go, usually wear this, and so it is familiar to the animals (?).

[I omit the rest of this note as of no consequence.—S. B.]

40. He rejected the system of the mountain ṛishis, and put an end to the false (pursuit) of a worldly rest.

NOTES.—This is the 5th work, viz., the preparation of life in the Snowy Mountains. The mountain ṛishis are the same as the heretics (Bráhmaṅas?) who practice austerities in the midst of the forests.

The system of these men and the species of "fixed composure" they strive to attain, consist in the exercise of mortification and self-denial, training themselves to be unaffected either by joy or sorrow.

Now, although by these means they may be born in one of the heavens, yet they are hereby not disconnected from the world (the three worlds); hence the text speaks of the worldly character of their resting point.

How false their idea that they can arrive at the condition of perfect freedom from thought (fi seung, fi fi seung, the highest heaven short of Nirváṅa)! For after 80,000 kalpas, the root of evil growing again, they fall from their estate to the world of desire. Yea! and may even be born in the three evil ways, according to their previous karma. The Diamond Sútra (Vajra Chandaka) says, "more than 80,000 kalpas passed and gone." If then it is possible to be brought down from the state of forgetfulness, this is a worldly system of fixed composure.

The Lálita Vistára says: "The prince royal having come to the Snowy Mountains, and living amongst the ascetics there, asked the ṛishis, saying, 'In practising these austerities what rewards do you look for?' They replied, 'We seek to be born in all the Heavens.' The prince was dissatisfied with this answer, left them, and went on as before, arriving at an A-lam-ka-lan (Áraṅyaka

Sangráma?) where there were two Yuh-to-lam-fi (cells?) in which two eminent rishis lived. On asking them the same question, he found that they sought the rest derived from birth in the four empty heavens (Arúpa-Lóka). After considering their case also he said, 'all these have no elements in them of final emancipation;' so he rejected their creed also and left them."

41. He ate grain and hemp seed, subduing pain, subduing pleasure.

Notes.—The Lálita Vistára says: "The prince coming to the Ka-ye (Gaya) mountain, to the Ni-lin (Nairanjana) river, reflected, considering that, as he intended to penetrate to the secret influences which actuate the conduct of men, he might, after six years, be in a position to save them. Thus he addressed himself to the practice of austerities (Dushkaracharya), each day eating one grain of hemp, one grain of rice; by this means reducing himself to a condition of overcoming all pleasure. Afterwards, perceiving that this was not the true way, he pursued the contrary method, using indulgencies, bathing, perfuming himself, and so on; by these means he subdued sorrow (as the text says)."

42. But he who would make sweet music, playing on the lute, must adopt the middle method (viz., having the strings neither too sharp nor too flat), and the music will be perfect.

Notes.—This is the reflection of Śákya when he had perfectly subdued both pain and pleasure (*i.e.* proved their inutility in the task of self-perfection).

When Buddha was living in the world there was the son of a rich nobleman, who, wishing to become a recluse and follow Buddha, gave himself up to every sort of self-mortification, even to the degree of causing his blood to flow; and, having acted so for a long time, still attained to nothing; so that he felt disposed to give the matter up and reject all hope of attaining reason. Buddha then asked him this question relating to the lute, and so shewed him that the middle course, between extreme mortification and over indulgence, was the true method. He soon obtained the rahátship. His name was Yih i (100,000 ears).

[The above is an abstract.—S. B.]

43. So also he who would reach the complete accomplishment of his aim, and arrive at the condition of Buddha, must also affect the middle course, and his reward will be fully attained.

Notes.—This is the application of the former section. The

Sanscrit word Fo-to is the same as "Intelligence" (Kioh), *i.e.*, self-intelligence and intelligence of that which is not self (ta). He who (or that which) is the perfect fulfilment of the practice of intelligence is here briefly called "Fo," *i.e.*, Buddha. This is the great Nirváńa resulting from the two "empty systems" [*i.e.*, proving, or arriving at the conviction of, the emptiness both of the elements composing humanity (*i.e.*, perception, understanding, &c.), and the elements composing substance or matter (dharma)]. The expression "yan" refers to the many lines of conduct pursued in going through the six páramitás, tending all to this perfection of Buddhaship. (The idea of the whole section is, that the only sure standing-ground is the medium course between over severity and relaxation.—S.B.)

44. From this point (of his life) he selected that place beyond the dragon cave.

NOTES.—Place near the Bódhimanda [Bo-ti-tchang (arena of Bódhi)], which is in the middle of Jambudwípa. The Buddhas of the three periods have all selected this place to arrive at supreme wisdom; so (Śákya) selected it. The Pun-hang Sútra says, "Buddha remained in the Bódhimanda; in that place there was a king of dragons (Nága), called Ka-cha.[1] This dragon was very old, and had witnessed the signs which attended the five former Buddhas when they arrived at supreme wisdom. This dragon, therefore, with his attendants, taking flowers, music, and banners, went out to met Bosat, and to render him reverence."

Again, when he arrived at the place where the blind dragon Man-lun (Montchilinda. Lál. Vist. 355) dwelt, sitting by the side of the water, he launched forth a ray of glory which illumined the waters; the dragon's eyes were forthwith opened; and he also came out with flowers, &c., to reverence Buddha. This dragon had seven heads; his body encircling Buddha three times round, and elevating his heads, he prostrated them again before Bosat.

45. Then bathing his body, he entered the Lin river (Nairanjana).

NOTES.—The Sútra says, "Bathing himself in the Ni-lien river (Ni-lien, for Ni-lien-chen-na the river Nairanjana, now called Niladjan. Vid. Jul. and Lál. Vist.). At this time all the dévas, waiting on him with all sorts of flowers and perfumes, threw them

[1] Kalika. Introd. to J. B., p. 386.

in the middle of the river. After he had bathed, a tree-déva, lowering down a branch, as with a hand assisted Bosat to come out of the water and arrive at the shore.

46. Exhibiting (the sign) that (food be given him) to eat, he received the rice and milk of Lan-to (Nanda).

The Nirvána Sútra says, "The body of Juloi, for innumerable asankyas of kalpas, had taken neither food nor drink; but now, on account of all the Śrávakas, he declared that he would first receive the rice milk of the two shepherd girls." The Pun-hang Sútra says, "Bosat being about to go from the tree of knowledge, at that time a Déva spoke to the two daughters of Shin-sing (Sujáta), the lord of the village, one of whom was named Nanda (joy), and the other Polo (Bala. H. B., 380[1]), *i.e.*, strength [Obs., in Lálita Vistára the two persons are called Trapusha (melon) and Bhalliká (gourd?], and said, 'You are now able the very first of all to present an offering of food.' On this, the two women boiling rice and milk over the kettle, there appeared various sorts of wonderful signs; then, using a patra (alms-bowl), they respectfully offered the food. Bosat having eaten this, took the alms-bowl, and flung it into the river Ni-lien (Nairanjana). On which, Śakra, taking it up, returned with it to his heavenly abode, and there paid it honour, erecting over it a pagoda. This is the 3rd of the four heavenly pagodas."

47. Exhibiting (the sign) of that seat, he received the grass mat of Ki-Tseung (Śánti, S. Hardy).

Notes.—The rules of sitting in India require that certain boughs of trees be gathered, and a mat made of them. At this time, therefore, Śakra, transforming himself into a grass-cutter, Bosat asked him his name; he replied, my name is Ki-Tseung; then he received his grass mat—it is of a bluish colour, pliable, bright, and soft. (Vid. this fable, Manual of Bud., p. 170).

48. With regard to this excellent basis of his very last (appearance).

Notes.—Po-chü Bosat had only this one body (for his completion)—he was to receive no more; hence the expression of the text.

49. He directed his steps (or tended or pointed) towards Bó-

[1] Nandâ and Nandabalâ. Introd. to J. B., p. 386.

dhimanda (*i. e.*, the arena in which he should arrive at supreme wisdom).

NOTES.—The Sanscrit Bo-ti (Bódhi) is equivalent to the Chinese "reason" (Tao). The place where Buddha perfected reason, is hence called Tao-tchang, *i.e.*, arena of reason. The Si-yu-ki says, "In the country of Mo-kit (Magadha), forty lis S.W. of the river Ni-lien (Nairanjana), there is a tree called Bo-ti." The Pun-Sing-tsah Sútra (extracts from the Lálita Vistára) says, "When Bosat was about to arrive at that place, all the dévas of the world of forms (Rúpa-vacharas) first hung on the tree silken banners or streamers." They use them as signs or signals of a sacred place.

50. As the profound cause of complete deliverance.

NOTES.—"Deliverance," that is, the removal of all obstacles, so that there should be no impediment in the way; the dust of the world unable to hold the maxims of the world to govern; and so able to undergo or forfeit complete renovation. This is the fruit to which all the sages tend. (This paragraph is obscure.—S.B.)

51. So he ascended the diamond throne (Vajrásana).

The Kiu-she-lun (Kóshakáraka Śástra?) says, "Under this seat turns a golden wheel;"—hence the expression "diamond seat." All the Buddhas have perfected wisdom on this spot, and it has always been a place of religious veneration.

52. Possessing the 140 excellent distinctions, not enjoyed by (or in common with) the two vehicles (viz., Pratyéka Buddhas and Śrávakas).

NOTES.—According to the Fah-siang school (this school is one which professes to believe in the reality of external phenomena, the same probably as the school Sarvástivada), there were 140 signs peculiar to Buddha, viz., 32 siang (Mahá-purusha-lakshaña), 80 marks of beauty (anuvyanjana-lakshaña), 10 powers (daśa-bala, M. B. 380), 4 Wuh-sho-wai (Abhaya, Jul. II., 300, "freedom from fear"), 3 nim-chü (fixedness of reflection?), 3 puh-ü (?), 4 yih-tsai-tsing-sing (complete purities), great compassion, great love, no forgetfulness, complete knowledge. (These last 18 are probably the 18 Buddha Dharma of Spence Hardy, M. B., 381; which see.) These works are peculiar to Buddha, and hence the expression of the text.

53. And the 84,000 gates of the law (fah mun) leaping high over the 10 earths (daśa-bhúmi).

NOTES.—When speaking of the world, the word Fah is used; but that from which all the holy sages proceed is called Mun. As, therefore, amongst sentient creatures there are 84,000 chan lo, ("causes of trouble;" lit., "dust-troubles"), so there are the same number of fah-mun ("gates of the law;" fah-mun may perhaps be freely rendered "methods of salvation"). These act as medicines act, curing the former (84,000 dust-troubles). The term 10 earths (daśa-bhúmi) refers to the following:—1. The earth of happiness and joy.—2. The uncontaminated earth.—3. Resplendent earth.—4. Brilliant wisdom earth.—5. The earth difficult to excel.—6. The ever-present earth.—7. Without exercise or action earth.—8. The earth ever at rest.—9. Virtuous wisdom.—10. Law-cloud earth.—[Obs. that these *earths* are conditions of mind, "though which an adept in Buddhism must pass before he obtains his final reward, the perfection in any one state being denominated the element or 'bhúmi' of that state. The commentator of the Riksha Bhagavati enumerates ten Bhúmi appropriate to the priesthood, the last being Buddha-Bhúmi." (Lálita Vistára, Edit. Calcutta, 1853, p. 8, n.)] The Ü-ka Śástra says, "For ever separated from the very minutest particle of sorrow, and every barrier in the way of knowledge being entirely removed, so that there be complete and perfect intelligence; this is 'Fo ti,' the earth of Buddha (Buddha-bhúmi);" it is above the others: hence, in the text, the expression, 'leaping high.'

54. After this, the army of Mo (Mára or "Sin") destroyed by the energy of his love, covered with confusion and fear; see them return!

NOTES.—This is the sixth sign, viz., the conquest of Mára, and the attainment of supreme reason under the Bódhi Tree. At this time Juloi had attained his thirtieth year. The Ü-ka Śástra says: "There are four sorts of demons (Mo).—1. Déva Mára.—2. Dead or Death Mára.—3. Trouble and anxiety Mára.—4. The five yin Mára (*i.e.* pancha skandha, *i. e.*, rúpa (form), védana (perception), sanjnána (thought), sanskára (action), vijnána (knowledge). These five are the causes of ignorance, and the obstacles in the way of man's arrival at perfect purity." (Vid. Jul., II., 385, n.) In the text, they speak of the army of Mára, which alludes to the first species, the Dévas who compose his retinue. No doubt, indeed, that each of the Máras was overcome; but for the purpose of fixing a basis for observation, he specifies this sort of Mára particularly. The Lálita Vistára says: "When first Bosat seated

himself in the Bódhimanda, he immediately launched from between his brows a gleam of light, called 'destroying Mára,' (*Kong mo, i.e.*, Sarvamáramandalavidhwansanakarin, L. V., 286), which illumined the whole of the palace hall of Mára Rája, so that he lost all colour from his face, and at the same time trembled violently with fear. Then Mára, taking with him all his soldiers, and assuming every species of shape calculated to inspire fear, each one grasping his massive club, they desired to overthrow Bosat. Then Bosat, entering on the Samádhi of a 'merciful heart,' the clubs and arms which the demons used, all produced lotus-flowers. Seeing this, all the army of Mára, affrighted, fled with precipitation."

55. By the power of Samádhi (fixed heart) he destroyed the poisonous influences of the ogling women, and changed them into old hags.

Notes.—Mára had four daughters (Lálita Vistára says ?), properly, indeed, of no sex whatever (?). These in a body came before Bosat, all of them, by their conduct, trying to seduce him, and destroy his "pure conduct" (Fan hang, Brahmá discipline). Then Bosat, by the influence of his Samádhi of love, changed the four women into hideous hags; so that, covered with shame, they fled.

56. Whereupon, Kin-Lo (solid and strong, Sthávara, L. V., 305), the earth Déva, leaping forth, became his surety.

Notes.—Koon Fah San Mui King (*i.e.*, Buddha Samádhi Sútra) says: "Tan Rája (Pápíyán?) demanded of Buddha: 'Who is your surety, whereby your merit may be proved?' Bosat immediately, disengaging his hand from the sleeve of his robe, pointed to the earth; then all the great earths were shaken six times, and Kin Lo, the earth Déva, leaping forth, appeared, exclaiming, 'I am surety.'"

57. The dévas who live in space (gods of the atmosphere, L. V. 373) proclaiming the news (lit. "opening out and turning," the flag, for example), made it known.

Notes.—Bosat having arrived at supreme reason, the dévas of the earth told it to the dévas of the air, and these proclaimed it among the heavenly spirits or gods, who, ascending to the highest heavens, declared the news (unfolded the news. Vid. Lálita Vistára, p. 373.)

58. Like a lotus, so came he out from the water (or rather, like

a lotus as it comes from the water, so was he) bright and glorious beyond comparison.

NOTES.—The Nirváńa Sútra says, "Juloi came into the world pure and spotless as a lotus."

59. Like the resplendent moon, as it were, being in space, illumining some darkened glen.

NOTES.—The Nirváńa Sútra says: "Juloi came into the world as the autumn moon at full, pure and calm, free from clouds, the admiration of all.

60. Seven days having passed he received the wheat and honey of Ti-wei (Trapusha), arousing them with a brief prediction.

NOTES.—"Seven days," *i. e.*, seven days after he had arrived at perfect reason. "Ti-wei," referring to the two merchants of Northern India. "Wheat," "honey," the usual food of India. The Lálita Vistára says, "Buddha having arrived at supreme wisdom seven days, there was a Tree Déva who told two merchants, one called Tai-wei (Trapusha) the other Po-li (Bhalliká), saying, 'You are now able to make an offering of food to Juloi?' On this each of the merchants offered wheat and honey. Buddha having received it, spoke on their account the Po-shi-yan-kwo (cause and fruit of charity);" hence the words of the text (vid. Lálita Vistára, pp. 362, 363).

61. Condescending to repeat his transcendant doctrines, he gave to Kia-keh the refuge afforded by keeping the precepts, conferring on them a share in the happiness of the dévas and of men.

NOTES.—The voice or words of Buddha are immaculate (without leak or deficiency); hence the phrase "yih-yin" (lit. "one voice"). "Kia-keh" is the same as Tai-wei (Trapusha). "The precepts," *i. e.*, the five precepts. The word "refuge (Kwai, *i. e.*, return)" refers to the three kwai or refuges (viz., the trisarana, or tun-sarana, "I take refuge in Buddha, in the truth, in the associated priesthood"). The reward of keeping the precepts is, to be born after death among the Dévas, and afterwards amongst men; hence the expression, "conferring on them a share, &c." Now the doctrine of all the Buddhas transforming the everlasting law (or it may be "teaching, during their appearance in the world, the everlasting law"), has these seven requirements before arriving at, or completing, the heart of man.—1. Charity.—2. Holding precepts.—3. The reward of being born in heaven.—4. The enjoyment of delight as a reward.—5. The removal of anxiety as a reward.—

6. Freedom from worldly influences.—7. Sighing for Nirvâṅa. Buddha, then, having arrived at supreme wisdom, just inclining, as it were, to look at the root of the matter (*i.e.*, taking a superficial stand-ground), first of all declared the refuge to be derived from keeping the precepts.

62. Having now completely accomplished perfection, he examined what were the influences of change (*i.e.*, what the direction of the influences in the world were as regards his doctrine).

Notes.—That is, examining who would be the first to obtain salvation.

63. Compassionating the two Ŕishis who had not found opportunity to hear the thunder voice (of Buddha).

Notes.—The two Ŕishis, viz., A-lam-ka-lan (Arádá Káláma) and M-to-lam (Udraka Rámaputra). Calling to mind the proper condition and the weakness of the hold of sin on these two heretics, he desired to convert them first: but (he said) that one had been dead seven days—alas! that he had not heard the sound of the true law! The expression "thunder sound" refers to the first of five sorts of voice belonging to Juloi.

64. Joyful (he said), the five men were able to sustain transformation by the law.

Notes.—The five men; that is, Kin-chan-ju, Poh-tai-li, Po-sha-pi, O-che-lun, Ma-ha-nam (vid. Jul., II, 364, n., Açvadjit Bhadrika, Mahânâma, Daçabala Kâçyapa, and Adjnâta Kauṇḍinya) Buddha next perceived that these men dwelling in the park of deer (Mŕigadava), the root of their principles being now properly matured, were able to receive salvation.

65. So it is, by the dust of the world and the senses (roots of evil) there is darkness and feebleness; but the wisdom of the sage, how vast and deep!

Notes.—All vexations and annoyances are able to pollute the pure heart; they are the dust of the eye, the causes of life and death; hence the word "root." The perfect wisdom of Buddha in all its kinds is revealed during the three ages in all the forms of being; and, therefore, cannot but be self-existent. Hence the words "wisdom of the sage," or "holy wisdom."

66. Obeying this law, then the law cannot admit of these roots

of evil; but following these roots then they cannot allow the admission of the law.

Notes.—The transforming doctrine of Juloi. The law is either "Kieun" or "Shat." (For an explanation of these two expressions, vid. the "Daily course of the Shamuns—appendix." We may briefly state that they are the titles of two schools; one of which professes to believe in the true character of phenomena, the other in their ideal character, sufficient for the wants of all sentient existences.) The "roots" are small or great. The great ones admit of but small portion of the law, as filthy food in a precious vessel. A little root is that which is connected with the great vehicle, and is like an insect bearing a great mountain. If we regard not the root, then both the man and the law are lost! (Obscure.—S. B.)

67. It cannot but be, indeed, that the river of sensual pleasure is that which swallows up men for so long; the influence of this foolish pleasure is that which blinds.

68. But if, hearing my words, there should be no profit, then would I plunge again into non-being.

69. Hereupon Śakra, monarch of the To-li heavens, cloud-driving through the thirty-three heavens.

Notes.—The Sanscrit word To-lo-ye-tang-ling-she (Trayastrinśas) is contracted into To-li, *i.e.*, the thirty-three heavens, viz., eight on each of the four peaks of Suméru, and Śakra's in the middle. Ti-shie, *i.e.*, Śakra (able to rule), the supreme ruler of the thirty-three heavens.

70. The great monarch of the "ever patient" Śakwala (*i.e.*, Sohochi Kai or Sahalókadhátu), closed or mist enveloped in the eighteen Fan heavens (Brahmá-lóka).

Notes.—So-po or Soh-ho-Sah-ho, *i.e.*, the (world of) patient beings, is a general name for this great chiliocosm; because the men of this Śakwala are very strong in endurance. Mahá Brahmá is the ruler of this region (Brahmá Sahampati. Introd. to J. B., p. 610).

The eighteen Brahmá heavens are these: in the first Dhyána (Shan) are three.—1. Fan-chung (Brahma-káyika).—2. Fan-fu (Brahma-puróhita).—3. Tai Fan (Mahá-Brahmá). In the second Dhyána, three heavens; viz.: 1. Shan Kwong (Paríttábha).—2. Mo-leung Kwong (Apramáńábha).—3. Kwong yin (*i.e.*,

"whose glory is as it were a voice," in which translation I agree with M. Rémusat and differ from Burnouf, [Introd., pp. 611, 612], *i.e.*, Ábháswara). The third Dhyána has three heavens; viz.: 1. Shan Tsing (Paríttaśubha).—2. Mo-leung Tsing (Apramáńa śubha).—3. Pien Tsing (Śubhakŕitsna). The fourth Dhyána has nine heavens.—1. Fuh-sing ("happy birth." Obs. Burnouf and others translate the corresponding title by "those who are without clouds." Anabhraka).—2. Fuh ngai ["happy love;" this does not correspond with Burnouf's list. The Sanskrit Punyaprasava evidently corresponds to the former heaven, *i.e.*, those whose birth or life is happy ("vie heureuse;" Rémusat). I do not know, therefore, the corresponding term for this heaven].—3. Kwang Kwo ("extensive reward" *i.e.*, Vŕihatphala).—4. Mo-seung ("absence of cares or thought engendering care." Avriha).—5. Mo Fan ("absence of trouble." Atapa).—6. Mo Jeh ("absence of heat." The other authorities give "those who see admirably." Sudriśa. But this does not agree with the text).—7. Shen-in ("virtuous appearance." Sudarśana).—8. Shen-kin (virtuous sight. Sumukha. Obs. Burnouf has a short note on this heaven, vid. p. 6. 5. The Chinese evidently follow the Nepalese list of Hodgson).—9. Shik-kan-keng ("termination of form." Akanishtha). These together compose the "eighteen heavens" of the text. "Fog-enveloped" refers to a epithet applied to Brahmá.

71. These, bowing their heads, pay him (*i.e.*, Buddha) worship; earnestly beseeching him to turn the wheel of the law; exhorting him to declare the law according to that which is just.

Notes.—The expression "bowing their heads" refers to the mode of salutation called the five wheels or circles, *i.e.*, prostrating oneself so that the face, both hands, and both feet touch the ground.

72. According to that which is just, *i.e.*, the system of deliverance, Juloi, investigating the subject and reflecting on the methods adopted by the virtuous ones now departed, in agreement with the systems of the ancient Buddhas, resolved to adapt his teaching to the common desires which actuate men generally.

Notes.—The "virtuous ones departed" refers to the Buddhas gone before, and, having arrived at supreme wisdom, entered the long night of Nirváńa.

The mode of deliverance here referred to is that known as "Fong pien," or the mode of salvation by three vehicles, *i.e.*

Pratyéka Buddhas, Rahats, Śrávakas; or, Buddhas, Pratyéka Buddas, Bódhisattwas.

73. Then all the Buddhas of the ten regions, showing themselves, simultaneously uttered words of praise and commendation.

Notes.—At the time Juloi contemplated the mode of deliverance mentioned above, all the Buddhas, appearing before him, uttered his praises, saying, "Excellent! excellent! Śákya Muni (? *man*, is this Muni, or might it mean, 'excellent doctrine of Śákya!'), the teacher and guide of the first (Doctrine)! He is able to declare the law of escape (Fong pien) according to that which is just."

74. These different divisions of the one law were all, nevertheless, directed against the stronghold of wordly deception ["the territory (yu) of dust-troubles"].

Notes.—This is opening as it were the Gate of Rescue. The Nirváńa Sútra says, "The law of one vehicle (*i.e.*, the law which produces escape by transforming the heart *at once* into the condition of Buddha), according to just precedent, is spoken of as three." The troubles and anxieties of life and death in the world are called the "territory of dust-troubles."

75. Whereupon, rising from the tree of Bódhi, he directed his steps to the park of deer (Mŕigadava).

Notes.—This is the seventh sign, viz., turning the wheel of the law in the park of deer! The Bódhi tree is the place in which Buddha had attained supreme wisdom. Having now received the earnest solicitations (of the Dévas), and intending to turn the wheel of the law, he removed from that place. The park of deer is the scene of his first efforts. The Si-yu-ki says, "This is where the king of the deer offered his life for the female deer that was about to drop her young." (Vid. the whole of this account, Julien, II, p. 361, from which it is copied.)

76. For three months harmonizing the root, the five men then obtained deliverance; Kiao-tchin-ju, understanding the first instructions of the compassionate teacher, hence received this name as the sign of his first having obtained deliverance.

Notes.—"Harmonizing the root during three months," *i.e.*, after waiting this time, Buddha, perceiving that the influences which affected the principles of the five men were now matured, went to convert them. Only not yet believing, they receive his

instructions, *i.e.*, they did not yet believe in him. Buddha observing the different changes their minds underwent, harmonized their principles by every sort of application (or experiment); so, after a lapse of three months, and having explained amongst them the various doctrines of the law, the three Chun (?), the four Tai (sublime truths, aryáni satyáni), and the twelve hing (?), then Kiao-chin-ju (Kauńdinya), first of all comprehending the method of deliverance, obtained the pure eyes of the law. Having immediately arrived at the condition of a Rahat, Buddha called him O-jo-kiao-chin-ju (Ajnáta Kauńdinya), the word O-jo (Ajnáta) signifying "delivered;" it was, therefore, applied to him as a title significant of his having first found salvation. The other four men obtained deliverance in succession. Moreover, the word Kiao-chin-ju is sometimes also written Chin-na (jina—victorious ?), which signifies "fire-vessel," a surname derived from his ancestor (grandfather), who first meddled in fire worship.

Now the explanation of these circumstances is to be found in his previous history. According to the Yan Kwo Sútra we find, "Śákya (Buddha) was, during his time of preparation (for supreme Buddhaship), the Ŕishi Jin Juh[1] (or 'a ŕishi practising the Páramitá of patient endurance'). He dwelt in a mountain, practising reason. At this time Kiao-chin-ju (Kauńdinya) was the king of the country, and was then called Ko-li—who was possessed of a cruel and wicked disposition. One day, taking his women with him, he entered on this mountain to hunt; being tired, he lay down, as it were, to sleep (or he pretended to sleep). Then all the women went into the woods to gather flowers; and as they went, came to the cell (or retreat) of the Ŕishi. The Ŕishi began to repeat Bara to them. After some time the king awoke, and not seeing the women, drew his sword, and went in search of them. Seeing them standing in front of the Ŕishi's cell, the king, in a rage, exclaimed, 'Who are you?' He replied, 'The Ŕishi Jin Juh.' Again he asked, 'And have you obtained "Sheung te teng?" *i.e.*, the Samádhi which raises one above the earth. He replied, 'Not yet.' The king replied, 'If you have not attained this, what are you better than the whole class of philosophers (Fan-fuh)?' and he proceeded to cut off his hands and feet with his sword. On observing that the Ŕishi's face and spirit underwent no change, he asked him if he were not angry at what he (the king) had done. The Ŕishi answered, 'I have no anger; so far from

[1] Jin Jo Ŕishi, *i. e.*, Kehântiŗichi. Vid. Jul. ii, 133.

that, I vow that when I obtain supreme wisdom, you, the king, shall be my first convert.' Accordingly, having now arrived at the condition of supreme reason, he first converted Chin-Ju (Kauńdinya), the same Ko-li Rája."

77. Then Shi-li-fuh, accidentally meeting with Ma-Shing, by considering the traditional words of the teacher, came to a perception of the true mode of wisdom in the way.

NOTES.—The Sanscrit Shi-li-fuh (Śáriputra) is equivalent to "the son of the Tsau bird" (śári, a sort of hawk with remarkable eyes); this was a name derived from his mother. At first, he was a disciple of the heretic Shan-che-na (*i.e.* Sangha, vid, M.B., 195), he was versed in all the eighteen Śástras, unrivalled in discussion (or power of distinction), and was ever open to learn that which any teacher could impart; but, nevertheless, he was unable to obtain knowledge of the true doctrine. He was, moreover, disgusted with the rude and evil proceedings of these heretics (*i.e.*, their way of life). One day as he was going along the road, he met, by chance, Ma-Shing, the Bikshu (Assaji, M.B. 195), carrying his staff and his alms-bowl, his garments clean and properly arranged, his gait slow and dignified. Pleased at the circumstances, he asked him, saying, "Who is your master?" Ma-shing (Assaji) replied, "The great Sha-mun Buddha—he is my teacher." Again he asked, "And what law does he teach?" To which he replied, "I am but a disciple of a day (*i.e.*, recently become a disciple), and I cannot recollect much; but, in brief, one gáthá may exhibit his doctrine, and this is it: "All things (tehu fah) proceed from the connection of cause and effect. And the destruction of things results from the same. I, Buddha, the great Sha-Men, always make this the body of my doctrine." (This gáthá is given by Spence Hardy, in M. B., 196, and is somewhat differently translated. Originally it may have differed from the Chinese, but vid. M. B. in *loc. cit. supra.*) Shi-li-fuh, on hearing these words understood the mode of deliverance. The expression "Tai," is equivalent to "the true method of doctrine." Ma-shing was the first of the five (four?) men, in the park of deer who obtained salvation. O-che-lun was his name. (Açvadjit, Assaji? vid. M. B. 149. It is evident he was the first after Kaundinya. Vid. Jul., II, 356.)

78. Tsái-shuh-shi, following in the same steps, and adhering to the doctrine of the same teacher, with his friend found refuge.

NOTES.—"Tsái-Shuh-shi," the same as the family name of the great Muh-kin-lin (Mugalan). Formerly he followed the same teacher as Shi-li-fuh. As a condition of his obtaining satisfactory knowledge, he said, "Should I obtain sweet dew (Amṛita), then I vow freely to dispense it to all." That day, seeing Shi-li-fuh coming back with a happy and light appearance, he asked him, saying, "Has my brother obtained knowledge of the excellent law." Shi-li-fuh then said whom he had met, and repeated the gáthá; whereupon Mugalan (Mudgalaputra, Sanskrit) understood right reason, and both agreed in saying the law of the heretics (Brahmanas, Jul.) is vain and laborious. These two men, with the same mind, each brought 250 disciples to follow Buddha, and become ascetics, who, according to the laws of the order, shaved their heads, and took the kia-cha (Chívara) robe. Buddha then addressing the assembly said, with respect to these two disciples (Śáriputra and Mugalan), the first, *i.e.*, Śáriputra, shall become pre-eminent for wisdom—the other, Mo-kai-lin, for spiritual perception (or "force of divine faculties," vid. Jul. ii., 299).

79. In consequence of the conversion of Ke-ye-shi, the whole of the fire worshippers returned (to right reason) in a mass.

NOTES.—Ka-ye-shi, the followers of Ka-ye [*i.e.*, Káśyapa. Obs. The patronymic or generic (as in introd. not., which see), here indicating Káśyapíyas], *i.e.*, heretics who concerned themselves in the worship of fire. The surname of Káśyapa was Yeou-lou-pin (Ouron-viloâ, vid. Jul. ii, 483). Buddha, wishing to convert him, went, therefore, to his resting place. Káśyapa explaining, as an excuse, the absence of any proper accommodation, Buddha pointed (or directed his steps) towards the Dragon Hall; (on which Káśyapa) replied: "The nature of the dragon is malevolent in the extreme; it is to be feared he may do injury to your virtuous person (lit. injure virtue)." Buddha said, "I have no fear;" and so, arranging his garments, he by himself entered the middle of the divan (or seat). When evening came, the dragon returned, and seeing Buddha, he soon became angry, and belched forth fire to destroy him; Buddha then entering into "the Samádhi, resembling the brightness of fire (Agnidhátu Samádhi), enveloped himself with it as in a cave or casket of fire. The dragon by this means had no ground by which to overturn or destroy him,[1] only seeing the alms-bowl of

[1] Perhaps the translation might be "The dragon was consumed with grief at finding no ground (of attack, *i. e.*, no means for attack)."

Buddha pure and cool, he leapt into the midst of it. Káśyapa, that evening seeing the glare of the fire, addressing his followers, said: "That Shamun, no doubt has been destroyed." The morning came, on which Buddha, taking up the alms-dish, came out and showed himself (or it) to Káśyapa, and so his heart was partially subdued. He then asked Buddha to remain there a short time and receive nourishment from him; but he, *i. e.*, Káśyapa, was not yet willing to receive the law in its completeness. Then Buddha displayed before him 500 spiritual changes, so that at last he returned to the refuge, and relied on Buddha's doctrine, bringing with him 250 men, his disciples, who, at one time, shaved their heads, and became ascetics; and so all obstacles being removed to their complete deliverance, they (or he) became Raháts; and what instruments they had employed in the service of their fire worship, they flung all into the water (the river Nairanjana, Jul.). Now, Káśyapa had two brothers, who lived somewhere down the stream, one named Ka-ye (Gayakáśyapa), the other Na-tai (Nadíkáśyapa); these also were connected with the worship of the fire dragon. When they saw the sacred vessels in the middle of the stream, they came up in haste to see for themselves what had happened; and finding their brother already become a Sha-mun, they asked him the reason; whereupon he repeated the law on their account, on which they, with 250 of their disciples, also became followers of Buddha, and all obtained the fruit of Bódhi (*i.e.*, Rahátship).[1]

(The expression "lui" refers to a class or heap, as the Yih King explains it with reference to a heap or bundle of grass.)

80. So it could not but be but that there should be overflowing streams of the heavenly dew (amŕita), enlightening displays of Mo-ni (Maṅi).

Notes.—"Sweet dew," the drink of the gods, compared here to the excellent law of the one vehicle (*i.e.*. Buddha). "Moni," otherwise "Maṅi"—this signifies "unspotted," and is the name of a precious jewel (pearl). The beauty of the round body of this jewel (lit. "this jewel as to its body being round and beautiful"), when placed opposite to or in contrast with any substance, brings out its form, just as the self-existence of Buddha (exhibits his character). "Bright manifestations" (referred to in the text) allude to the various actuating principles and springs of action

[1] Vid. the act of Káśyapa, Jul. ii, 483, 484.

found amongst men, and which, according to their root, enable them to receive the law.

[End of Vol. I. in the Chinese.]

81. Both in the world of dévas and the world of men.

NOTES.—"The world of dévas." Buddha when he had arrived at supreme reason, and fourteen days had elapsed, transforming himself, appeared in the heavenly abodes of Tsz' Tsoi (Íśwara). At the request of the King of the Dévas (Dévéndra) he repeated the "Shih-ti" Sútra (Daśabhúmi Sútra?). Again, on a second occasion, dwelling in the same abode, he repeated the Pan-jo-li-t'su (Prajná ? Sútra). Dwelling in the abodes of Ma-hi-shan-lo (Mahéśwara, *i.e.*, Śiva), he repeated the Man-shu-tsien-poh-king (Manjuśrí sahasrapatra Sútra?). Dwelling in the To-li abodes (the heavenly abodes of the Trayastriñśas heavens), in the tower called Po-pin-kwong-ming ("universally diffused brightness") he repeated the Yeh-tsze-ki-teh-fuh-teng King (the unrivalled Sútra which proceeded from the summit of the head of Buddha, and is in explanation of the word "one;" lit., "one-word-single-unique-Buddha-head Sútra"[1]). Moreover, on account of his mother Ma-ye (Máyá) delaying three months, he spoke various accounts of the law (or, he said Bana on various occasions). "The world of men;" referring to various places in all the sixteen kingdoms of the five Indies.

82. In the parrot forest, and the Chi forest.

NOTES.—"The parrot forest." The Peh-ün Sútra (the 100 influence or consequence Sútra) says, "Buddha was going from She-wei-Kwo (*i.e.*, Śravasti) to Mo-kie-ti (Magadha); in the middle of the road or journey there was a wood of parrots (ying mo-a Macaw). The king of these parrots, and all his friends and relations, on this occasion kept flying in the air, and respectfully addressed Buddha and all the priests, saying, 'Would that, stopping here in my forest, you would let me make my offerings to you.' Buddha immediately assented; and, with his company of priests, entered into the midst of the wood. Then the parrots perching around beheld the beauties and excellencies of Buddha's person, and the silent and decorous behaviour of all the priests; so that each of them, conceiving joy

[1] Is this the Aditapariyá Sútra, M. B. 191?

in their hearts, believed at once on Buddha. The same day they died, and were born as dévas in the To-li heaven (thirty-three heavens).

"The Chi forest." The Nirváńa Sútra says, "On one occasion Buddha was dwelling on the banks of the Ganges, in the middle of the Chi-san (?) forest. Then the world-honoured one, taking up a few fallen leaves in his hand, asked all the Bikshus, saying, 'Are these leaves in my hand many? Are the leaves in all the great earths many?' All the Bikshus said, 'World-honoured one! the leaves of the great earths are so many that they cannot be numbered; but those in the hand of Juloi are so few that they need not be mentioned.' Buddha replied, 'All the laws which I have now completely learned are many, even as the leaves of all the great earths; but those which I have delivered and explained on account of sentient beings are but as the leaves in my hand.'"

83. Also at the Heron Lake.

Notes.—In the Karańda Véńuvana, near Rájagriha (vid. the Chinese, explained in Jul. iii, 510), there is a white Heron Lake, where Buddha delivered the Prajná Sútra of sixteen chapters (or collections).

84. Also at the Vulture Peak (Gŕidhra Kúta).

Notes.—"At Rájagriha," the mountain, called in Sanscrit, Ki-che-kien (this seems to be taken from the Pali Ghéjakato). Buddha here delivered the Tai-pan-jo (Mahá-Prajná), the Fa-hoa-king (Saddharma puńdaríka), and other Sútras.

85. Also in the Sea Palace.

Notes.—Buddha was residing in the palace of the Dragon King Nan-to (Nanda), in the "Ki tseung ma ni po tsong wan to tchang po lan," *i.e.*, "the beautiful pearl chamber, belonging to the precious tower possessing the great cloud hall. (Obs. This Sútra is in my possession. The title is somewhat different from that in our present work; the translation above is accommodated to that of the Sútra); he here delivered the "Tai wan lun tsing li king," *i.e.*, "the Sútra called the great cloud wheel, for asking rain. [Obs. This Sútra consists of magical formulæ (dháraní) for forcing dragons to provide rain in time of dearth.]

16. And in the garden of Amras (*i.e.*, the Amravana, Jul. ii, 390).

Notes.—"Om-ma-lo (Amra)," the name of a fruit (Mango); in

the midst of this garden there are many of these trees. Buddha here delivered the Tsing-ming (pure name, Śuddhanáma?) Sútra.

87. And in the monkey stream (Markatahrada, Burnouf, J. B., 74).

NOTES.—Near the city of Pi-ye-li (ye is perhaps a mistake for che; in which case it would be Pi-che-li, *i.e.*, Vaiśáli), there is the lake of the female monkey (Markatahrada); over (or on) this lake is a Ts'o-tsing residence (flower or grass Vihára?). Buddha, dwelling in this, entered on the Samádhi which admits of no disturbance. Here, having converted 500 merchants, they all attained rahátship. It was on this occasion the assembly asked Buddha to relate the ancient Nidánas (history of previous births) of Ye-shu-to-lo (Yaśodará, the wife of Śákya) and of the 500 merchants (or this last portion may mean "to relate the connection of the 500 merchants in former times with Yaśodorá").

88. And in the cave of the Fiery Dragon.

NOTES.—Si-yu-ki says, "To the west of a city in Northern India (viz., the capital of Na-kie-lo-ho, *i.e.*, Nagarahâra; vid. Jul. ii, 96 . . .) is a large and deep cavern, the residence of the Dragon King Kin-po (Gópála). This dragon, having all at once conceived a wicked heart, desired to destroy the king and waste his country. Buddha knowing this, and using his power of spiritual transport, conveyed himself there. The Dragon King seeing Buddha, was rejoiced, and his wicked heart was dissipated. Buddha repeated the law on his account, and gave into his charge the precepts against slaughter. But, because he besought Buddha much to remain there, and to receive his religious offerings, Buddha replied, 'I am about to enter Nirváńa; but now, for your sake, I bequeath to you my shadow, and it shall come to pass after my Nirváńa, if a wicked heart again rises in you, you ought to look at this my shadow (and so destroy it). Moreover, I will depute 500 Raháts to remain here, and receive your offerings, so that you may have ground of merit.' On this account no great troubles or calamities ever happen to the king of this country or the city."

The Records (*i.e.*, Si-yu-ki) say, "Hieouen (Tsang), a Fah-sse (priest) of the Tang dynasty, himself went to worship this shadow and pay it religious homage (*i.e.*, make offerings to it). The shadow of Buddha, when viewed far off, was of a gold colour, bright and glittering; but when (he came) near, it was not visible."

89. Again residing at Po-lo-nai.

NOTES.—The true Sanskrit is Po-lo-ni-sse (Varáńaśí, or Benares). This word in Chinese is Kiang Yau Kwo., *i.e.*, river-bound country. Buddha, residing here, delivered the "Ch'uh-yan-shi-shai-chün-fah-lun," and other Sútras.

90. Then dwelling at Mo-kie-ti (Magadha).

NOTES.—In Chinese this is, "the peaceful country." Buddha here delivered the "Fah-yen," "Pun-hi," "Kin-ü," and other Sútras.

91. Also resting in the Kin-ku grove (*i.e.*, the grove of sála trees).

NOTES.—That is in Sanscrit Sha-lo, or "strong" (Kin-ku). Yan, a doctor of the law (fah-sse), in his translations, says, "Kin-ku, just before Buddha was about to enter Nirváńa, the very last of all he delivered the Parinirváńa Sútra (great Nirváńa)."

92. Also resting (under) the M-loh tree (music tree?).

NOTES.—Living at Pi-ye-li (Vaiśáli?), Buddha resided under a tree, and there delivered the "Kün-teng-poh-chü-sing-sse-teh-to" Sútra (*i.e.*, "the baptism that rescues from life and death, and confers salvation").

93. Also on the Peak of Lenka, near the borders of the sea (Lanká, Ceylon).

NOTES.—This is a mount on the borders of the sea in Southern India; the Sanscrit is Leng-ka, but the Chinese puh-ho-wong, "not able to go." Only those possessed of the power of spiritual transport are able to go there. Buddha residing here, delivered the Sútra called Jih-leng-kia [Lankávatára Sútra. (Obs., the word Jih "to enter" does not seem to form part of the Sanscrit title)].

94. Also in the mount bordering on the Po-To precipice (Patalaka).

NOTES.—This Sanscrit word, written in full, would be "Po-tan-lo-kia." It is now written in brief as Po-To. It is the name of a little white flower. They say that this mount produces a great number of these flowers, the fragrant scent of which is perceived from far. This place (*i.e.*, Patalaka, perhaps the present Ramaseram) is the residence of Kouan-tseu-tsai (Avalókitéśwara); Buddha, stopping here, repeated the Sútra called "Shih-i-min-kouan-tseu-tsai ("Avalókitéśwara with twelve faces"). (Vid. an account of Pótalaka, Jul. iii, 123).

95. Again in the garden of Bamboos, called "Ka lan to" (Karandavenavana).

NOTES.—The Sanscrit "Kia-lan-to," is in Chinese "ho-in," and is the name of an animal known in western countries (Obs., "ho-in" means "lucky voice;" the animal is a squirrel. The whole story may be read in Spence Hardy, M.B., 194, and also Jul. iii, 29, &c. Note that this garden is known to the Singalese as Wéluwana.) He who is called the nobleman Ka-lan-to is the same as Pin-hi-so-lo-wang (Bimbasára Rája), who built in this garden a vihára, and presented it as a gift for the followers of Buddha to reside in. (Vid. Spence Hardy, ut supra.)

96. And on the golden ground in the She-wai country.

NOTES.—The Sanscrit word is "Che-lo-fu," which is corrupted into "Che-wai (Śrávasti)." The Chinese equivalent is Man-wuh-shing (the city for perceiving and knowing things). In this city dwelt a certain noble, named Su-ta-to (Sudatta), which in Chinese is equivalent to Chen-chi (*i.e.*, virtuous gift or charity). He ever had compassion on, and felt for, the orphan and the poor. The men of the country, therefore, made much of him; and also named him Ki-kon-to (Anâthapiṇḍika—he who bestows charity on orphans and the bereaved. Vid. Jul. ii, 296). Now, on one occasion, having gone to the city of "the house of the king," *i.e.*, Rájagriha, and living in the house of his friend the nobleman Humi, his object being to find a proper wife for his son, he observed the house fitted out with perfumes, flowers, eatables, &c., because Buddha was expected there on the morrow. Now Sudatta was, in reference to himself, a follower of the heretics; and when at first he heard the name of Buddha his heart grew cold, and his hair stood on end. This evening, therefore, he went to hear the law and worship Buddha; and so, on account of his former ground of merit, he received a rightly believing heart, and obtained the first fruit (*i.e.*, entered on the first path, Sowán). He then asked Buddha to return with him to his country, to which Buddha assented; and he then returned to his house. He then began to look around (lit. "divine") for a propitious or excellent ground for Buddha to reside in; and, considering the garden of Chi-to (Jeta), the heir apparent, that it was both elevated and pleasantly situated with a commanding view, fit for erecting a vihára in, he went, therefore, and asked it of the prince royal, who, laughingly replied, "If you will cover the garden with gold I will sell it you." Sudatta joyfully said, "The garden then is mine." So, returning to his house, he brought out

his gold, and with it covered upwards of eighty ki'ng (a ki'ng is $15\frac{13}{100}$ square acres. There were eighty of these). With this he bought the garden, and built in it a vihara, and called it "Chi hwan" (Jétavana); but now people call these buildings 'Fuh shi' ("Temples"). This explains the expression in the text, "golden ground."

97. Then in answer to the earnest desire or thought, in the air he manifested himself.

Notes.—Po-sse-ni-Wang (Praśnajit Rája, king of Kośala in Buddha's time) and the Mo-li philosophers or sectaries (this expression is probably a contraction of Yang-kin-li-*mo-lo*, or Angouli Mâlyas, concerning whom, vid. Jul. ii, 295; or it may be translated, "Praśnajit and his wife Mo-li," *i.e.*, Mallikádéví, concerning whom, vid. M.B., p. 285), having met Buddha, believed on his law. Whilst paying him reverence he said, "If my daughter Ching-man (Srímáládéví?), who is possessed of perfect wisdom, and whose mind is already prepared to understand the law, were to behold Buddha, she would certainly obtain Bódhi (reason). Would that this might be the reward of my faith!" Ching-man hearing of the merits of Buddha, filled with joy and bowing her head, said the following gáthá in his praise: "Would that Buddha, possessed of infinite love, would cause me now to behold him!" At the time she made this prayer, Śákya-Juloi suddenly caused his incomparable, lovely person to appear to her in the air; on which occasion he delivered the Ching-man Sútra (Srímáládéví Sinhanáda Sútra).

98. Then disappearing from the mountains, and appearing in the heavingly abodes. (Obs., the symbol used is difficult to translate; it signifies "destroying," "annihilating." I have translated it "disappearing from," as though he, *i.e.*, Buddha, was the object of this, as a verb).

Notes.—Buddha, from the Vulture Peak Mount (Gŕidhrakúta) disappearing, was born in the To-li heaven (Trayastrinśas). Disappearing from Su-mi (Suméru), he was born (or appeared) in the Nu-ma (Yáma, the first heaven above the Trayastrinśas) heaven; and so, having ascended up to the highest (heaven), he delivered the Fa-yen Sútra.

99. Again he delivered the law as it is symbolized by the six points of the heavens.

Notes.—The Yan-po-sah-kai king (Upasampanna Sútra?) says, "The son of the nobleman Chen-sing (well-born, Sujáta?)

asked Buddha, saying, "All the teachers of the heretics (*i.e.*, Dissenters) teach their followers at early dawn to bow to the six quarters, N., S., E., W., above, below); and by this means they promise them increase of years and wealth. Has Buddha's law any thing of this sort?" Buddha replied, "Yes! certainly. That which is called bowing to the east is the Ta'n (dâna) Páramitá (*i.e.*, the páramitá of charity). Bowing to the south is the 'Shi' (śila) Páramitá (the virtue páramitá). Bowing to the west is the Tsh'een (Kéhanti) Páramitá (the páramitá of patience). Bowing to the north is the Pi-lai-ye (Vírya) Páramitá (the energy páramitá). Bowing to the nadir is the Chen (Dhyána) Páramitá (the páramitá of contemplation). Bowing to the zenith is the Po-ye (Prajná) Páramitá (the páramitá of supreme wisdom). If a man is able (to attain to) a state of correct contemplation, day after day, and if he pays worship and homage in a similar manner, what is this but increase of years, wealth, and honour?"

100. Again transforming himself, he assumed a body only three feet (chih) in size.

NOTES.—Ku-shi-lo (Gochira), the nobleman, was only three feet high. Buddha on his account transformed himself into a person of similar size, and so caused him to return to a knowledge of the right law.

101. And again there was the "hand covering" and the "pointing (to the earth) transformation."

NOTES.—"The hand covering." The Ling-yen Sútra says, "The world-honoured one, with his 'Chen-feon-tan' golden hand (Chen-feon-tan, lit. 'Jambudána,' probably for 'Chen-tan,' *i.e.*, chandana or sandal wood), stroking or touching the head of A-nan (*i.e.*, Ánanda), at the same time the Śakwalas of the Buddhas pervading the ten regions of space were violently shaken six times; and the infinite number of Buddhas who abide in these Śakwalas, each diffusing from his person, brought rays of glory, which (rays), at the same time, came together to the garden of Che-to (Jétavana), and meet as if outpoured on the head of Ánanda."

"The pointing transformation," the *Tsing Ming Sútra* (Viśuddhanáma? Sútra) says, 'Lo-Kai (?) Brahmá, addressing Shi-li-fuh (Śáriputra), said, 'I see this earth or ground as it were the heavenly palace

Vimakita Sútra, vid. infra, 115.

of Íswara.' Śáriputra replied, 'And I behold it as a dunghill, full of filth and pollution.' On this the world-honoured one with the toe of his foot touching the ground, immediately the great chiliocosm appeared all glorious, and adorned like the perfectly beautiful abode of Buddha."

102. Then again the dispersion of the rays of glory, causing the advent of the Buddhas, and the one body universally diffused and divided into many bodies.

Notes.—The Fa-hoa king (Saddharma Puńdaríka Sútra) says, "Tai loh shwoh Bosat (Mahásthámaprápta Bódhisattwa?) desired to see the body of Śákya Juloi divided into all the Buddhas. At this time the world-honoured one darting a ray from the mark between his eyebrows (urna), it spread through and illumined the ten regions, each containing an innumerable number of lands of Buddhas; all these Buddhas then taking with them each one a Bódhisattwa and his attendants, came to this earth; and so all the Buddhas appeared sprung as it were from the body of Śákya Buddha."

103. Again this world issuing brightness through the other worlds.

Notes.—The Koon-Mo-leung-shui king (*i.e.*, Avalokitamitábha Sútra; or, as the "Koon" is generally omitted, it will be the "Amitábha Sútra." Amitábha is the attribute of eternity—symbolized under a Buddha of that name, "The eternal one") says, "Weï-tai-hi, the honourable woman, seeking a birth in one of the pure lands at this time, the world-honoured one caused her to behold (caused to appear) all the pure lands of the Buddhas of the 10 regions, and then bade Weï-tai-hi (Videha?) to behold and choose in what land she would be born. Then Weï-tai-hi, pointing to the country of O-mi-to (Amitábha) Buddha, said, 'Would that I might be born there, and practice the sixteen dhyánis.'"

104. Again transforming the pure, and thus causing the pure to envelope the impure.

Notes.—The Fong pin po sz'yan king says, "Buddha, darting forth a great ray, and illumining the earths (chaityas) of the Buddhas of the ten regions; there were innumerable Bódhisattwas who appeared—the So-po world at the same time appearing, deprived of its mountains, rivers, forests, &c." (?)

105. Again following the common method of teaching, and

at the same time, making this method illustrate the true mode.

NOTES.—The law which Buddha taught, proceeded not according to the two methods of philosophy, *i.e.*, the common method and the true method. So it is said, "pursuing the common mode, he caused its light to return and illustrate the true." And, again, "the vulgar method and the true are one;" and, again, "by the common method he threw light on the true." The Jin Wan Sútra (Káruńika rája Sútra) says, "Praśnajit, the king, asked this question, 'Is the common method of philosophy included in the super-excellent method (of Buddha) or not?' Buddha replied, 'The one system and the two systems are both contained in this: "It cannot be predicted of me that I speak, nor of you that you hear."'" (That is, the absence of affirmation is the true philosophy.) Again, the kings of the sixteen countries (of India) thought thus in themselves: "When the most merciful Buddha obtains Nirváńa, who then shall defend our country." On this Buddha forthwith began to deliver the sublime wisdom which shews how the Bosat preserve the fruit of Buddha (*i.e.*, how the perfection of Buddha resides in the Bódhisattwas).

106. But his doctrine was as the responsive echo of the hollow valley, or as the stroke which has awakened the sound of the spreading bell.

NOTES.—This alludes to the method of Juloi in adapting his doctrines to the secret moving power of his hearers.

107. Amongst those which he uttered, we find the four Ho-hom (Ágama Sútras), which advocate the existence of a sensible world, and the right Pot-yo (Prajná), which declare all to be empty.

NOTES.—Buddha having arrived at perfect wisdom, within thirty years from that time he declared these two methods of instruction, appealing to the principles of men according to their state of preparation. The Sanscrit, Ho-Hom, is, in Chinese, Fah-kw'ai (Refuge of the Law). These belong to the Little Vehicle (Hínayána) mode of instruction. They are four in number:—1. The large Ágama.—2. The medical Ágama.—3. The mixed Ágama.—4. The additional Ágama. The doctrine of these works declares the existence of all things (Sarvástivádas). Hence the name used in the text. The Sanscrit, Pot-ye (Prajná) is, in Chinese, "Tsing Hwui" (Pure wisdom). This is the doctrine of the Great Vehicle (Mahá-

yána). There are eight principal works of this class, all of which declare the emptiness of all things.

The Mi-yen, the Fah-yen, the Fuh-ts'ong, the Ti-tso'ng.

NOTES.—These are the names of four Sútras of the Great Development school; the Ti-tso'ng is the same as the Shih-lun-king.

109. And the questions of Sz' yih.

NOTES.—Sz' Yih, the name of a Déva of the Brahman heavens (Brahmachárin), his enquiries into the character of the law, is the origin of the title of this work.

110. The Ü-Sin (conversations as to the Heart) held at Leng-ka (Ceylon).

NOTES.—The Yih-leng-ka-Shan Sútra[1] advocates the doctrines of the Great Vehicle. This Sútra regards the heart as chief, hence the title.

111. The "Wan hing shan leng yen."

NOTES.—The "Shan leng yen," is the name of a Samádhi, from which this Sútra receives its name.

112. "Yeh Ching mo leung i" (one vehicle endless systems).

This also is the name of a Samádhi from which the book takes its title.

113. The "Tai pi fan to li" (Great compassion Lotus flower).

NOTES.—The Sanscrit "Fan to li" is equivalent to the Chinese "White Lotus flower" ("pih lin fah"). The title is derived, as it were, from the beauty of this flower. (Fan to li—pañdaríka.)

114. The Fah Kü To lo ni (The Dháraní, which are as the torch of the Law).

NOTES.—The Sanscrit, To-lo-ni, signifies "collection," from the fact of their being a "collection" or "epitome" of the law. They are the evidence or exhibition of the enlightenment of the mind in perfect rest, and from this the comparison in the text of "a torch."

115. He spoke also the Sútra of the "Pure Name" [Vimakita (Edkins)].

[1] Lókávátára Sútra.

NOTES.—The Sanscrit "wei mo lo kih," in Chinese, is "Tsing Ming" (Pure Name); it is also called "Spotless Title" (Vimakita Sútra).

116. The "Sui Ying" of Su-ta-na.

NOTES.—"Su-ta-na (Sudána)," *i.e.*, "character" (virtuous charity). The name Śákya took on leaving his wife and two children.

117. Then there are the distinctions between "pun sse" and "pun sing" (matters concerning one's own experience), the beauties of the "Fung Tsung" and the "Chung Tsung."

NOTES.—These are the four names of the "teaching of twelve divisions."

The Pun sse are the affairs connected with Buddha's previous states of existence (the Játakas).

The Pung sing are predictions addressed to Bódhisattwas, &c. (Itivŕittaka).

The Fung Tsung are Gáthás.

The Chung Tsung are Géyas.

(The Gáthás denote a whole narrative in verse, including many Géyas or stanzas. So a Sútra contains many Itivŕittakas or predictions; but the latter never the former.)

(Obs. For an account of the "twelve divisions" referred to at the beginning of the above notes, vid. Burnouf, Introd. to Ind. B., pp. 50, 51.)

118. The comparison of the elephant, horse, and hare, crossing a river.

NOTES.—This refers to the order observed in Bosat, Üm Kioh (Pratyéka Buddhas), and Ching Man (Śrávakas). The river over which they cross is the river of humanity, so to speak, or the twelve Nidánas (causal concatenation—the causes which hold us in life; vid. Jul., sub v. Nidána). The understanding of these three classes of beings is of the same character, but not the same degree (of depth). The comparison in the text refers to the animals mentioned when they cross the river—the hare floats, the horse half reaches the bottom, the elephant walks straight across on his feet, touching the bottom.

119. Then there is the comparison of the three chariots, drawn by the sheep, the deer, and the ox (this comparison occurs in the "Lotus of the Good Law"); and the leaving the dwelling.

NOTES.—The Fah hwa king (Saddharma Puńdarika Sútra) speaks

of these three chariots, by way of comparison; the chariot drawn by a sheep being compared with the condition of a Śrávaka; that by a deer with a Pratyéka Buddha; and that by an ox with the condition of a Bódhisattwa. These three chariots exemplify the system, as it provides sufficient means of deliverance. The two first means of conveyance represent that mode which is known as "Fong pin." The other vehicle, known as that of the "great white ox," is the true mode of deliverance; drawing any brother to a distance; conveying all; losing nothing. The "dwelling" spoken of is in keeping with what the Sútra says, "There is no rest in the three worlds—they are as a burning house;" again, "The body of the three worlds (*i. e.*, the body possessed by those in the three worlds) is, as it were, a house, from which everything is beheld through a distorted medium."

120. Then again he spoke of it (his doctrine) as the actual, the empty, and the "keeping the mean," or the "safe mean."

Notes.—These arrangements are the methods of instruction employed by Juloi. His mode of teaching was not uniform. First, he spoke of the method which supposes the existence of all things; then he adopted the method which supposes their non-existence. Neither of these was the perfect method. The safe method is the medial one. He spoke nothing dogmatically, but awaited this period for the development of his doctrine.

121. And again he spoke of a holding ground (or standing point) of unvarying brightness.

Notes.—The method which advocated the non-existence of matter only overthrew the faulty portion of the other system; viz., of actual existence. As yet the nature of the true spiritual existence (lit. the nature or being of the true soul) was not manifested. The system then was that the conditions or qualities of all distinct phenomena constitute the actual being or substance (of that phenomenon). This, indeed, is the "being" exhibited in the vulgar method of philosophy. But that which throws light on the belief in "being," which consists in the absence of conditions, life, death, increase, decrease, and in the most complete indifference (*i. e.*, absence of all selfish or partial consideration); this system is the true one.

Now this theory is that which depends on the word Mo ("absence of," *e. gr.* this theory says that the true consists in the "*absence of* the false," or "*the absence* of conditions"). But the

word "fei" (opposite to) destroys the "Mo," and it is thus we arrive at a perfect theory. (That is, to say: "Truth is *not*, or does *not* consist in certain phenomena," is different from saying: "Truth is that which is not phenomenal." The first is mere negative. The second is an affirmative clothed in a negative form. The power of the word fi may be learned from the expression meaning an asura —"something which is not a man." Now with mo instead of fi the expression would mean "absence of men," or "without men.") This idea opens out and illustrates the character of the true vacancy, which contains in a mysterious manner the nature of the true soul.

This is the "brightness" or enlightenment to which the text alludes.

122. Again he spoke of his doctrine as the "vulgar" method (tün, *i.e.*, blunt) and the "gradual" method.

Notes.—These terms refer to the mode of Buddha's teaching, as he adapted it to the capacities and condition of his disciples.

123. And again he styled it the "half" method and the "full" method.

Notes.—The Nirváńa Sútra says, "The word 'pun' (half) is the origin of all cares and troubles; but the word 'mun' ('full') is the root of all virtuous or excellent laws (fah). The one is an imperfect philosophy, the other a perfect one."

124. Then again there was the absence of assertion, and the constant condition of assertion.

Notes.—The Prajná Sútra says, "Let no one say Juloi has a law which may be spoken. [This phrase "Yan sho shût fuh" is a very common one in the Prajná Páramitá works; it seems to allude to the impossibility of the Supreme Buddha (Tathágata) being confined to the limit of any fixed law in his doctrine. His law is spiritual; speaking to, affecting, the inmost self of a man, and not stereotyped in external forms.] If a man say that Juloi has any law which may be spoken, he libels Tathágata. 'That man does not understand the system which I deliver.'" Again, there is a Gáthá which says, "From the first, in the garden of deer, down to the last scene near the Po-Tai river[1] (Hirańyavatí, M.B. 345; the Po-Tai of the text, is equivalent to Va-Ti, a contraction of this river's name; Buddha çrossed it just before entering the garden of Sál trees), during this interval of fifty years, not one word did he say."

[1] Adjitavatí; vid. Jul., sub voce.

This assertion refers to Tathágata in his pure and essential nature—identical with all the Buddhas of the three worlds (or three ages—present, past, future). Hence the expression "absence of assertion." But, according to the common theory of Buddha's existence, he did not cease from delivering the law.

125. Again there is the expression "not hearing" and "constantly hearing."

Notes.—The Tsing meng king (Vimakita Sútra) says, "What we say as to delivering the law, is actually no delivery and no exhibition of it; and as to hearing, there is really no hearing or attaining anything. In this is the system or secret of the highest philosophy.

126. And he gave them a ground of confidence to assure them of his protection on which they might be able to rely.

Notes.—The Lotus of the good law says, "I now, on your account, give you a security for what I say ('to be security for'); the end is not emptiness [or, 'which (*i.e.*, security) in the end shall not be false or vain']." This theory is that all sentient beings have the nature of Buddha; and all shall attain to his perfect condition.

127. There were, moreover, supplying the deficiency, so that there should be no forgetfulness.

Notes.—Ánanda, twenty years after Buddha attained supreme reason, became a convert. But Buddha, by the power of his influence, brought all his sayings, both delivered before, which he had not heard—and even those of the former Buddhas, to his recollection. Therefore, the Pao Tsi king (Ratnákara Sútra) says, "Juloi, by the divine power of Buddha, assists all sentient beings, and enables them to recollect without mistake or chance of error; and, addressing them, says, 'You now may recollect through ages past;' and thus having implanted in them the root of all virtuous principles (laws), these beings forthwith are able to recollect all, by the power of Juloi."

128. There is the absence of the "small" and yet not "great."

Notes.—This is the basis of the "Yung Tsang" school (this school professes to combine all theories in one; it seems to be eclectic, finding truth in all systems, agreeing with none; but I am in want of the Sanscrit term). The "small" alludes to the

small vehicles, and the great to the great vehicle. The text alludes to the fact that though the roots of action, or principle, in men be different, yet there is no distinction of great or small in connection with essential being. The Sútra of the questions of Manjusrí says, "Buddha declared that twenty schools into which the little vehicle should divide in future time, were but like the water of the sea; the taste of which in every place was the same: all these schools do not spring from the 'Prajná-páramitá school.'"

129. Without bounds, and yet no centre.

NOTES.—(This is another definition belonging to the same school. There is a similar definition of the Divine Being—"the centre of a circle whose circumference is nowhere," or a similar idea.)

130. The three vehicles united, enter the one vehicle.

The Nirváńa Sútra says, "The one vehicle,'that is, the nature of Buddha; with reference to this system all sentient beings have this one vehicle." The Fa hwa Sútra says, "Amongst the earths of the Buddhas of the ten regions, there is only one vehicle as a law, neither two nor three."

131. The three natures together return to the one nature, which is that of the law. [Obs., the term here rendered by "nature," refers, in all the later Buddhist works, to the one essential substance or being which pervades immensity.]

NOTES.—"The nature of the law," *i.e.*, the nature of Buddha (hence Buddha is the same as what is literally the *Law* or Dharma). The Nirváńa Sútra says, "The nature of the Śrávaka, of the Pratyéka Buddha, and of the Bódhisattwa, is the same; they are together but the one essential nature."

132. He, in truth called himself (or may be called) the father and mother of his helpless children, the guide and leader along the even path by the precipice.

NOTES.—The Nirváńa Sútra says, "Buddha, thinking on the welfare of all sentient beings, and regarding them as poor children, is therefore considered as the merciful father and mother of all created beings."

The Fa hwa Sútra says, "Now on account of you all, I become a great leader and guide, knowing all the precipices, dangers, and

winding paths of life and death." This is what the text calls the precipices, *i.e.*, the evil paths of the three worlds. The word "i" (smooth or even) refers to the mysterious power of the one vehicle.

The Fa Yen Sútra says, "Buddha is regarded as a father to all creatures, because of the kind assistance and advantage he gives them; and as a mother, because he nourishes and produces in them the seed of Buddha's nature. He is a leader, because he guides them to a place of rest; a teacher, because he bids them enter into the only true centre of being.

133. Like the sun or moon in the dark (or profound) vault of heaven.

The Kin Kwong Ming King (Suvarńa Prabhása Sútra) says, "The sublime sun, Buddha, whose wide-spread rays brighten and illumine (all things.)." Again, it says, "Abiding for a time in the three worlds, like a sun he enlightened (the world, as with) daylight."

The Fah Yen Sútra says, "The moon has four distinguishing peculiarities. 1. Its rays drown the brightness of all the other stars. —2. It appears and disappears according to season.—3. Its shadow cannot but be manifested in all the surfaces of pure water in the world.—4. It appears face to face to all those who behold it, (*i.e.*, though they be in any relative position to one another: referring to the shadow in the water, as well as to the moon itself.) So also, is it with respect to Buddha's appearance in the world. 1. His presence eclipsed all the heretics of the two vehicles. 2. He regulated his period of manifestation according to the work he undertook of illustrating the truths he proclaimed.—3. His appearance cannot but be reflected in all the receptacles of supreme knowledge of all beings, the pure hearts which pervade the three worlds of all the Śakwalas (*i.e.*, his presence is visible in the heart which is developed in the good). 4. All beings who regard him with reverence speak of Juloi as being in their immediate sight, filling their hearts with joy, and on their account delivering the law." The great Pi Shi Lun (Mahávibhásha Śástra) says, "The moon as it shines on high in the heavens has two sorts of beneficial effects.—1. It spreads its bright rays through the dark void.—2. It strengthens and nourishes the plants and trees. So Buddha, coming into the world, conferred two benefits. 1. He dissipated and scattered the dark errors of ignorance.—2. He nourishes and strengthens the virtuous principles of men and Dévas."

The expression "dark (or profound) vault," in the text, alludes

to the abodes of life and death. The Wei Shi Śástra (Vidyá-mátra-siddhi) says, "Not yet arrived at true wisdom, we ever dwell in the land of dreams; hence, I speak of the long night of life and death."

134. Providing (as it were) a ferry boat over the sea of va shadows.

NOTES.—The infinite wisdom and great love of Tathágata, pro viding (or containing) a method for conveying all beings, and transporting them from the shores of life and death; and as it causes joy to use it, it is called a ferry-boat. All secondary existences, vain and empty as they are, the text likens to (a sea of) shadows; the sea, *i. e.*, the troubles and anxieties in which all beings are anchored, and so cannot cross over to the other shore.

135. As a rain-cloud, causing that which is withered and dry to return to life.

NOTES.—The Fah hwa king (Saddharma Puńdaríka) says, "When Juloi was born, he was as the rising of a great cloud, from which rain descends on all beings, trees, plants, and shrubs, according as their several divisions receive nourishment." So all sentient beings dried up by cares and troubles, the water of the law not having yet descended, are compared in the text to that which is withered; but Juloi having become incarnate, according to his ever compassionate and merciful nature, delivered the law in due measure, so that all beings whose principles were good, received increase and strength; hence, the text speaks of returning and restoration to life.

136. Providing salvation and refuge, he directs to the final path that leads to the eternal city.

NOTES.—"Salvation," that is, deliverance. "Refuge (or return)," that is, speedy escape.

Tang Liang, a priest (fah sse) of the Liang dynasty, says, "A lord delivers or protects his country—a man's own relative protects his family. But Buddha is not so, he protects and saves all."

The expression "eternal city," refers to the Nirváńa.

137. But, alas! the end is at hand!—His work now completed, merit completed dwells not with us!—Now about to resume his original nature by returning to the source from whence he came!—the fuel expended, the fire dies out and perishes!

NOTES.—This is the eighth sign in the life of Śákya—viz., his entering Nirváńa beneath the two sála trees.—Juloi having made an end of crossing the influences of life (*i.e.*, having finished his work in life), it is said, therefore, in the text, "his work completed;" being about to terminate the great exhibition of his power (or being), he gave indications of returning to the true state of repose (Nirváńa); hence, the expression, "his finished merit could not dwell among men;" the expressions "pun" and "ün," both refer to the one true essential state of being.

The Fa Hwa King (Lotus of the Good Law) says, "Buddha this night ceased to exist; as the fire dies out—the fuel being expended." The Fah Yen King says, "Juloi, for the purpose of exhibiting all the active principles of life and existence, was unwilling to remain for ever obscured (*i. e.*, in Nirváńa). But for the sake of men and Dévas, who were satisfied with the bodies they possessed, he exhibited the unchangeable condition of 'Won Sheung' (anuttara, *i. e.*, insurpassable condition)." All the Buddhas of the ten regions not entering Nirváńa, except for the purpose of harmonizing and elevating the principles of all sentient beings, exhibit this destruction (having accomplished their work). Now the end of manifestation is called destruction; viz.: that destruction which admits of no division or separation.

139. From this time he directed his course to the land of plenty, and arrived at the golden river.

NOTES.—The city of Ku-shi-lo (Kuśínara, or Kuśínagara. Although *Kośala* would be almost suggested by the Chinese). This is a city remarkable for its riches and abundance, so that it has no rival. Hence the name. The Sanscrit term in full is "I-li-pan-na-fi-tai (Hirańyavatí, M.B., 345, or, Adjitavatî, Jul.); this is contracted to "Po-tai" (vid. supra. 124). In Chinese it is equivalent to the "river which possesses gold." This (land) produces camphor (jambu), sandal wood (tan, for chandana), and gold. No water can be purer than that of this river. Sang-Tsung-Fah-sse, of the Liang dynasty, says, "Buddha came to the border of this river, intending to enter Nirváńa; then he compared the turmoil and hurry of life and death to the eddies and flowings of the river's tide, the motionless golden sands to the unchangeable and enduring nature of Buddha." Again, in the previous history of Buddha, at the time he was fitting for the supreme Buddhaship, he resided in this place as the Chakravartí Lu-chi (Bódhiruchi?); and now being about

to enter Nirváńa, he came to this land, as it were, by way of recompensing it.

140. The bright rays and the words of his mouth, together reaching through the innumerable worlds of the Buddhas (chaityas), the mountains shook, and the earth quaked, and all around were heard the sounds of lamentation.

NOTES.—The expression in the text is "gate of the face," and refers to the mouth. The scattering of rays is the most remarkable of the distinguishing marks of Buddha. The "rays" and "quaking" are signs which attended the occasion. The expression "dust chaityas" refers to the innumerable worlds of the Buddhas. The Nie-pan-hou-fan King (Nirváńa Sútra?) says, "All the Śakwalas of the ten regions quaked and shook, and there came forth the sound of a great voice—the cry of pain and lamentation, as of one in distress."

For how else could it be when the world was to be left desolate, and the sun of wisdom about to set? They mourned for a truly compassionate father. So all the great seas raised their floods and roared, and a sound of grief pervaded the world. Yan-Fah-sse, a priest of the Liang dynasty, says, "Things without life moved towards him! (*i.e.*, inanimate objects displayed their love to him.) How much more those possessed of a heart!"

141. His different appearances being now ended, at the same time appeared the blood of the Che flower.

NOTES.—The Nirváńa Sútra says, "All the eight sorts of dragons observed, with pity, the grief which pervaded all things; then through their bodies the blood appeared, like the juice of the Po-lo-che (Paláśa) flower."

Liang, a priest of the Liang dynasty, says, "This is a flower of India—white in appearance, and with red juice."

142. Having received the last offering of Shun-to (Chunda, vid. M.B., 343).

The Sanskrit Chan-To is equivalent to the Chinese "Kai-mian-i" (excellent system of liberation). He was the son of a smith (artisan) of Ku-she (Kuśínara). Coming to Buddha, he addressed him in these words: "As you have commanded the men of the world to obtain ground for reward, receive, I pray you, this, my offering, which is to be the very last. Buddha, on this, assented to receive it." (Spence Hardy says, it was an offering of *Pork*, M.B., 343.)

Now one may ask such a question as this, "The Sútra says, how is it when he refused the offerings of dévas and kings, he accepted this one of the workman's son?" In reply, we may quote the words of Liang Fah-sse, "Buddha desires not in his system either to reject the insignificant or accept the many—the rich and the poor are alike; and, although Shun-to was born a poor man, yet his virtuous intention was very great. It was because in the other cases this principle was not observed, their offerings were rejected." Now what is said respecting "virtuous intention" is only significant of a man's being acquainted with the fixed principle of the law (or the fixed law) [An important disquisition here follows.] But how could the diamond body of Tathágata receive food? The Nirváńa Sútra says, "During endless kalpas past, Juloi had received neither food nor drink; but on account of all the Śrávakas he first received the rice and milk of the two shepherd women; and on account of all sentient beings he received the last offering of Shun-To"

143. Receiving the secret words of Pi-ye (Pápíyán).

Notes.—"Pi-pi-ye," *i.e.*, wicked; the po-tsün (comprehensive?) name of Mára Rája. The Nirváńa Sútra says, "Mára came to offer a precious offering to Buddha; and at the same time delivered a 'protective formulary." Buddha said, "I accept your dhárańí (formula) for the good of future ages." It is held, therefore, by the followers of the four schools (?) (Ánanda, Káśyapa, Upali, Kátyáana?).

144.—Repeating the four excellent distinctions (lit., virtues) in order to manifest the three "I."

Notes.—The four excellent distinctions are these "permanency," "delight," "personality," "purity." These are the four fruits of Nirváńa. The three "I" are these—"Prajná" (supreme wisdom), "complete deliverance," "the essential body." These are the four bases or substance of Nirváńa. In Sanscrit the letter "I" is signified by only three dots—one dot above and two below (.·.). The upper dot signifies the essential body; the left-hand dot below signifies Prajná; and the right-hand one, perfect deliverance. This theory provides for both subject and object (in the condition of Nirváńa). The Nirváńa Sútra says, "Tathágata repeating the following words (lit., chanting or intoning) said, 'I now finally establish these three laws (dharma) for the sake of all beings.' Hence the name Pari-Nirváńa."

145. Pointing out, or exhibiting, how the 10,000 actual existences all return to one nature.

NOTES.—"The 10,000 states of being" refers to the great number of existing creatures. The "one nature" is the nature of Buddha. Juloi arrived at the point of Nirváńa directly after he had stated this doctrine, "All creatures have the nature of Buddha."

146. Instructing To-lo Ka-ye (Káśyapa. But what does To-lo signify? Julien gives a name To-lo to a Bódhisattwa; vid. in loc.); settling the forty-two questions he asked.

NOTES.—Before the Nirváńa (?) there was a To-lo assembly (?). Káśyapa Bódhisattwa, on this occasion, proposed thirty-four questions, as, "How to obtain the indestructible body," "how to possess the Kin-ku force (Kin-ku is generally a synonym of Sála, the Sála tree)," &c. Buddha's answers, embodied in forty sections, are what is alluded to in the text.

[This section is obscure.—S.B.]

147. Converting Su-po-to-lo (Subhadra) when just completing 81 years.

NOTES.—The Sanskrit Subhadra is equivalent to the Chinese virtuous—sage. He was a master of an heretical school. Having heard Buddha proclaim the very profound exposition of Nirváńa, wisdom dawned in his mind, and ignorance fled; so he became a follower of Buddha, and entered on the duties of a Bhikshu, cutting off his own hair, and taking the Ka-she (chívara). He then at once arrived at the condition of a Rahát, aged 81. Buddha then said, "This is my very last disciple that shall attain salvation (during my lifetime)."

148. Overthrowing the cross-questions of the ten Ŕishis, he caused them to receive the influence of the day dawn.

NOTES.—These ten Ŕishis were all leaders of heretics; each came at the time of the Nirváńa assembly, and proposed their questions, which were successively answered by Buddha; and so they received the day-dawn, *i. e.*, reason, the end of night. The Nirváńa Sútra gives the names of these Ŕishis.

149. How rudely planned those four pagodas which were erected! To the remotest town, the most trifling ornament!

NOTES.—This refers to the four pagodas erected in the world; the first where Juloi was born.—2d. Where he arrived at supreme

reason.—3d. Where he turned the wheel of the law.—4th. Where he entered Nirváńa.

150. About to illustrate the subject of the perishable character of all existencies possessed of an active principle, he explained the absence of conditions leading to the absence of birth.

Notes.—"Active principle" refers to the vulgar theories with respect to being. In the middle of the hundred sorts of being, ninety-four are immediately liable to life and death. The Prajná says, "All the different species of being are but as dreams, shadows, bubbles, fancies. As the morning mist, or the evening lightning."

That which is unconditioned is the true system of philosophy. The nature of the being that is without active or partial principles of life, is that which is rid of all unreal conditions; there being an end of all such conditions, there must be an end also of life and death.

151. Raising up his diamond body, he dwelt again in the empty void.

Notes.—The Nirváńa Sútra says, "Juloi exhibiting his golden yellow body to all disciples said, 'By practising severities and enduring afflictions through the toil of ages have I obtained this golden, imperishable body. But now my years are come to an end. Minutely examine me therefore. To-day I am here such as I am; to-morrow I shall be no more. I am about to enter Nirváńa.' Then raising himself from his precious couch, he ascended into the air about the height of seven tala trees. This he repeated seven times, and then returned to his couch."

152. The sun and moon there shall decay! What then is the duration of the sparkling of a fire-fly.

Notes.—The sun and moon Dévas (Súrya-Déva and Chandra Déva) live 500 years, which is the same as 18,000,000 years of men. A hundred years, the life of man, compared with this, is but as the sparkle of a fire-fly. The Kian-Shi Ching-kwong-wang Sútra says, "The Dévas of the sun and moon exerting their strength, scatter the brightness of their rays and illumine the world; but in the end they shall perish!" The Mo-chang King (Anuttara Sútra) says, "The great earth, and even the sun and moon, will in time all come to an end."

153. Exhorting them to aim at the possession of the eternal

body, causing them to cast away and destroy the perishable and unenduring.

NOTES.—The impermanent body is that which consists of the four elements, and the five skandha,[1] and the thirty-six organised materials. It is this body which all the heretical schools declare to be everlasting. The Nirváńa Sútra says, "During ages past for your sakes have I sacrificed body, life and goods! Seeking the insurpassable Bódhi, ye ought, therefore, after my destruction, by an earnest degree of preparation, to strive after release from the three worlds; not again to lapse into indifference; to scatter and destroy the listless heart."

These were the very last exhortations of Juloi.

154. Then again returning, he resumed his gemmous couch; (with) his head (towards the north), he reposed in the "stork garden."

NOTES.—"Returning" and "resuming;" pointing to Juloi's return from the air. "His gemmous couch" refers to that whereon he slept. "Head sleeping," *i. e.*, his head to the north. In India the north is the superior quarter; or, again referring to the fact that after Buddha's Nirváńa, the true law would for a long time flourish in Northern India. The trees under which Buddha attained Nirváńa are called, in Sanskrit, Sa-lo (Sála), and in Chinese, Kin-ku (strong). The four quarters (of the garden?) each had two; altogether, therefore, there were eight of them; they are fifty cha'ng (feet) high; at the top they are bushy, and below thin and separate in the boughs. At the time of Buddha's Nirváńa this tree became, as it drooped and dried, of a white colour, like the stork; hence the allusion in the text.

155. Completely traversing the gate of Samádhi; about to resume the nature of the one true state of being (or the one true nature).

NOTES.—San-Mui, *i.e.*, Ching Teng (Samyak-Samádhi) "right composure." This is the gate through which all the holy sages pass, and hence the expression used in the text. The one true nature, *i. e.*, Fah-kai (Dharma-dhátu—"the world of the law;" but its meaning is, "the essential state of existence of all *being* properly so called"). The Nirváńa Sútra says, "The Great Nirvána

[1] The five skandha (Chinese "wan") are: 1. Rúpa, organized body. 2. Védana, sensation. 3. Śanyá, perception. 4. Sanskára, discrimination. 5. Vijnána, consciousness.

reason.—(Parinirváńa); this is the Fah Kai (essential mode of existence) of all the Buddha Tathágatas."

156. He entered (the different Dhyánis) in a direct order, and a reverse order, by an entire leap and a half leap.

NOTES.—This section explains the order of his entering the gates of Samádhi; the Nirváńa Sútra says, "Juloi, about to enter Pari-Nirváńa, entered the first Dhyáni (the Dhyánis refer to the different Swargas or divisions of the three worlds); coming out of that, he entered the second, and so he passed up to the highest of the four empty heavens (Arúpa-Lóka), and so entered the Samádhi of complete destruction. This is called in the text, "entering in a direct order." Emerging from the "Samádhi of destruction" he entered the Samádhi of the "fi fi seung" heaven (the highest of the Arúpa-Lókas), and descending, emerged through the first Dhyáni. This is called "entering by a reverse order." Then entering the first Dhyáni, and emerging from the third—entering by this third, and coming out in the empty abodes (Akańishta?) and so up to the very highest heaven. This is called a half leap. Again entering at the first Dhyáni, and coming out at the very highest—this is called a "complete leap." Thus, having passed through the different Dhyánis, and repeated the process seven times—he then addressed the great assembly: "I now, by using the eyes of Buddha, on every side contemplate all the laws of the three worlds. Ignorance (mo-ming, avidyá) is the natural cause of limitation (*i.e.*, of the mind). Nature (*i.e.*, exercise of powers of the divine nature) is the true emancipation. By this system of cause and effect (Nidána) I have now attained rest." This is called the great Pari-Nirváńa (Mahá-pari-Nirváńa).

157. Fixed thus in the Samádhi which results from a complete mastery of the four Dhyánis—he dived into the perfect rest of the three dots (*i.e.*, the three "I;" explained above, sect. 144).

NOTES.—The Nirváńa Sútra says, "The world-honoured one resting under the sála trees, stretched upon his precious couch, in the middle of the night entering the fourth Dhyáni, calmly thus sank to the great Nirváńa. Now what is called tang ch'i in the text (freely translated, "holding in perfect check") is in Sanskrit termed, San-mo-ti (Samádhi), *i.e.*, "sustaining the mind in a perfectly just and equal balance." It is collecting into one summary all the powers (laws) of mind—and so causing them to

undergo no confusion or dispersion, and deeply investigating their several influences—this is called "tang ch'i;" it is the same as the union of the seven Teng, *i.e.*, state of composure. Now the words, "relying on the four Dhyánis," is the union of these Teng, and is the Sanskrit To-na-yen-na (?) that is, "unmoved and silent thought."

The Pi-sha Lun (Vibhásha Śástra) says, "This composure (or Samádhi), is the "tranquil condition of fixed wisdom," admitting of no fault or deficiency, &c." The "three i" have been explained before (144); the "perfect rest" spoken of in the text, is that of Pari-Nirváńa. The word "ün" points to the perfect endowment of this condition (*i.e.*, endowed with every perfection); the expression "tsih," alludes to the complete removal of every barrier; this is, in short, the Nirváńa or Pari-Nirváńa of the Sútras—in Chinese, it is the "bright boundary," *i.e.*, the bright boundary line of all cares, anxieties, and exercises.

158. Then both Dévas and men cried out in distress (lit. prostrate); the birds and beasts utter cries of distress. The winds drive the clouds in confusion, the mountains quake, the floods return to their sources.

Notes.—These are some of the signs which distinguished the Nirváńa of Buddha, the tokens that his transmigrations (lit. changes) were finished. Our records are able to throw some light on the subject—Wang, relying on the discourse termed "A discourse on ancient and modern events," says, "On the 15th day of the 2nd month, of the 52nd (Jin Kiêuh) year of the reign of Mŏ-wang, of the Chow dynasty (949 B.C.), occurred the Nirváńa of Buddha. On this day, a violent wind suddenly arose, overturning both men and houses, and uprooting the trees of the forest. The mountains, rivers, earth, and heavenly mansions (palace thrones) were shaken. Mo-wang enquired of his assembled ministers the meaning of these signs, on which Pi-to, the chief historian (?) respectfully answered, 'These are the signs of the great saint of the west entering Nirváńa (destruction).'" The Nirváńa Sútra says, "Sse-tseu han Bosat (Sinha . . . Bódhisattwa) asked, saying, 'Why does Juloi choose the 15th day of the 2nd month to enter Pari-Nirváńa?' Buddha said, 'Because this is the time of springtide; the flowers and trees put forth their bloom, birds and beasts pair, all sentient beings are exercised by various thoughts and cares; Juloi puts an end to these thoughts, and enters Nirváńa.'" According to human computation, Buddha was now 79 years of

age exactly. The Kin-Kwang-Ming King (Vajra Prabhása Sútra?) says, "Sin Siang Bosat thought thus with himself, 'Śákya Juloi limits his life (or the life of Śákya Juloi is limited) to 80 years.' Suddenly, his abode was illuminated by a pure, wide-spreading light, and the four Tathágatas appeared before him, and spoke thus: 'You may count the drops of all the oceans, or the grains of all the Sumeru mountains, the dust of all the great earths, or calculate the limits of space, but think not you can count the years of Śákya Āyuchmat; let no question be raised on this point.'"

159. With respect to the rules for burial, he directed them to follow the old rules of the wheel kings.

NOTES.—The Nirváńa Sútra says, "Ánanda asked Buddha with respect to the rules he would have them follow in his burial. Buddha replied, that they should observe the old system of the wheel kings."

160. And he so ordered it, that the powerful princes, with respect to the offering they had made in seizing it, were, notwithstanding, unable to move it.

NOTES.—The princes of the city of Ku-shi (Kuśínara) in all countries were without equals. Having offered a golden coffin for Buddha's body, in the end, when they tried, they were not able to lift it. At this time, the Princess Máyá, descending from the To-li heavens, came to the scene of the Nirváńa, and taking Buddha's robe, alms-bowl, and *staff*,[1] in her hand, she gave way to excessive grief. Then Juloi, of himself opening the golden coffin, and raising his body, with clasped hands, respectfully saluted his loving mother, and begged her not to weep! Then Ánanda asked Buddha, saying, "If hereafter men should ask the reason of this proceeding, how should we answer?" Buddha said, "Simply say, that after Buddha's Nirváńa, the Royal Princess Máyá having come down, Buddha, for the sake of future beings not inclined to pay reverential duty to parents, raised himself from his golden coffin and with closed hands paid respect to her. This must be your answer."

161. Upon this, the golden coffin, raising itself, travelled round the great city of Kuśínara.

NOTES.—The Nirváńa Sútra says, "Juloi, wishing to enable all

[1] Khakkaram.

sentient beings to obtain equal degrees of merit (lit. happiness, *i.e.*, happiness resulting from merit), himself raised the golden coffin (or rather, caused the golden coffin to raise itself), and ascending into the midst of the air, to move on with a regular orderly motion. Then dévas and dragons, with perfumes, flowers and music, surrounding the coffin, paid it reverence; thus itself entering the west gate of the city Kuśínara, it came out of the east gate, and entering the south gate, it came out by the north; and thus coming out and entering seven times, all the people respectfully adored it; which finished, it then came and alighted on the odoriferous funeral pyre!"

162. But now, the precious torches would not enkindle (the pyre), awaiting the crowning act of worship of the cremation (To-wei).

Notes.—The Sanskrit To-wai (?) is the same as cremation or burning. The Sútra says, "Men and dévas seizing the precious torches, desired to kindle the scented wood of the pyre; but as soon as the fire approached it, it was extinguished. Then Ānanda, addressing the assembly said, "Juloi awaits the arrival of the great Káśyapa; for this reason the pyre will not burn."

163. It could not but be, that Mi-sing-ün (Ajátaśatru), should have in Rájagríha evil dreams respecting the ten-named, merciful, honourable one.

Notes.—Mi-sing-un is the same as the King of Rájagríha—his little name was Ajasat (Ajátaśatru). At the time of Buddha's entering Nirváńa, the king had an ill sort of sleep, and had five evil dreams; and so when he awoke, he knew that Buddha had entered Nirváńa. The ten names of Buddha are these: Juloi (Tathágata), Ying Kung (he who ought to be worshipped), Tching hien chi (Samyak Sambódhi, Jul. 497), Ming hang Tsuk (illustrious conduct-foot), Chin-chi (Subhadra, Jul.), Shai-kan-kiär (world-midst-deliverance), Won-chia'ng-sse (the insurpassable doctor), Tiu ü chung fu (the Harmonizer?), Tiu Jin sse (Śástá dévamanushyánám), Fuh (Buddha), Shai-Tsün (Lókadjyéshtha).

"Merciful"—this is the first of the four kinds of heart peculiar to Buddha.

164. The great Káśyapa, coming down from the distant Cock-pass (Kukkuṭapadagiri) was privileged to behold and reverently worship the thousand-wheel foot.

Notes.—The "Cock-pass"—this mountain has three peaks like the

foot of a cock, and hence it is called the Cock-foot Mountain (Kukkutapadagiri) Káśyapa stopped in this place as his abode, having left Kuśínara. Then, afar off, hearing of the Nirváńa of Buddha, not using his spiritual power of locomotion (pada irddhi), he took 500 disciples with him, and toiled on foot towards the sála trees. After seven days he arrived at the spot;—on which Buddha, putting forth both his feet from the coffin, exhibited them to him. Káśyapa respectfully adored them, and wept with pity. On the bottom of the feet were seen the 1,000 wheels, golden and glorious in appearance. After he had repeated some gáthás in praise of Buddha, the voice of Juloi was heard proclaiming, "I now endow thee with the eyes of the right law;—this ought to be your rest and support." The feet then withdrew.

165. Which done, sacred fire, self-kindled, consumed the Teou-lo and Chi-Ti.

NOTES.—"Teou-lo," the name of a silk of India. (Tara? or Tala?)
"Chi-Ti," the name of a valuable cloth of India. (?)

The wheel kings were all buried in this, and, according to their patterns it was bound round the golden body of Buddha; but when the fire would not light it, Káśyapa said, "No earthly fire can burn the diamond body of Juloi." On this, Juloi, by the force of his compassionate love, caused fire to proceed from the middle of the heart letter, and itself consume the body. Hence, the expression "sacred fire."

166. The water of the golden pitcher of Śakra, poured out, extinguished the (burning) sandal wood presented by kings.

NOTES.—The scented wood of the Tcha-pi (cremation, vid. Shan-lin-po, vol. 2, sec. 1, where it is explained) was all presented by heavenly and earthly kings; hence, the expression, "the sandal wood presented by (different) kings."

Śakra had previously asked Buddha, supplicating for half (the relics) of his body as She-li (Śaríra) that he might return with them to heaven, and pay them reverential homage. Buddha so far assented, as to promise him one tooth from his upper right jaw. The sacrificial fire having been now kindled, it burnt with unremitting power for seven days, and then was not extinguished. On this the dragon kings reflected, "If we extinguish this fire, then we shall be the first to take the She-li (Śaríra, relics); but all of them, exhausting their power, were unable to extinguish it. At last, Śakra, seizing his golden pitcher, and pouring out the water,

extinguished the fire. Then he saw the different linen cloths that swathed the body of Buddha, corresponding in shape to the body they had enveloped, and particularly the two uppermost napkins, which covered, as a screen, the middle portion of the body, remaining as they were, except that they were all burnt and reduced to tinder. Then the bone of the head (ushńísha), and four teeth unconsumed by the fire, remained as they were. Śakra, previously instructed, took only that one tooth Buddha had granted him. With it, he returned to the heavenly mansions, and erecting a chaitya over it, paid it reverence. This is the fourth of the heavenly chaityas.

167. The force of that vow still endures! The mystic incense of his compassionate heart! The very excellent body of his divided diamond (body)—the relic (Śaríra), which is the bone he has bequeathed!

Notes.—All the Buddhas, at the beginning of their course, make four vows.—1. To cause the salvation of all not yet saved, and so long as any worlds of beings remain, so long this vow shall endure. So in the midst of the, as it were, world of his true existence, within his great compassionate heart, there arises an apparitional (ideal) body, which is mighty in effecting the salvation of all sentient beings. And although it appears to have entered the condition of Nirváńa (destruction), yet there are relics left to benefit the world; so that whoever renders to these the honour which is due to them, shall have born in him a heart productive of virtue. Hence the expression, "the force of that vow still remains." "The incense of his compassionate heart,"—the Nirváńa Sútra says, "With respect to the excellent diamond state of rest, whilst in this condition he himself broke his diamond body, but did not forego his exceeding compassion; the relics still diffuse it through the world." (This is obscure.—S.B.)

168. Then came the gorgeous retinues of the princes of the eight kingdoms, with the four kinds of military array, each bringing their own golden vase, emulous to raise precious chaityas over the relics.

Notes.—"The eight kingdoms," viz., the eight principal countries of India. "The four kinds of military array," viz., elephants, horses, chariots, infantry. "The vases (Ta'n)," a kind of pitcher made of gold.

The Sanskrit Su-to-pa (stúpa) is equivalent to "precious tower"

or "pagoda;" they are made of earth, wood, stone; and are only called precious when they contain relics. The Bosat chü-toi Sútra says, "After the Nirváńa of Buddha there were eight hoh, four ta'u of relics (in Canton one hoh is ten pecks, a ta'u, one peck; the measure in the text, therefore, would be eighty-four pecks). The princes of the eight countries, with their military retinues, came to claim them; and the eight dragon kings came at the same time, with the intention of carrying them off by force. At this time there was a wise minister, who addressed them, saying, "If all the princes quarrel about the division of these relics then a part will conquer and some be defeated; in which case the relics of Juloi will not effect the good in the world they were designed for. I will, therefore, divide them into three parts; one part to be offered to the Dévas, one to the dragon spirits, one to the princes of the eight kingdoms." On this they were all rejoiced. Each one, taking his golden vase, received his portion; and, returning to their respective domains, erected pagodas for their preservation and worship.

169. Then whether the tooth or the hair (stúpa) Ka-yeh-po (Káśyapa) in the To-li palaces worshipped.

Notes.—This refers to the four stúpas erected by Śakra in the To-li (Tryastrińśas) heavens. The great Káśyapa, about to go to the Cock-foot Mountain (Kukkuṭapadagiri) to enter Nirváńa, first went to the heavenly abodes (bhuvana) to pay worship to these pagodas.

170. Both the ashes and dust Mo-yan-wang (Aśoka Rája) (stored in pagodas) erected throughout Jambudwípa.

Notes.—"The ashes and dust" refer to the remains of the pyre at the place of cremation (To-wei?).

At the time of the distribution of the relics the wise minister had preserved these and built over them a pagoda to conceal them. A hundred years having elapsed, there arose an iron-wheel king, called A-nu-ka, in Chinese Wou-yan (without sorrow), otherwise called A-yuh. He was the grandson of A-che-shi (Ajátaśatru). He erected all the stúpas of the five Indies. He, moreover, took the relics from the dragon palaces. He then commissioned the King of Demons (Yakshas?) to take the small fragments of the seven precious substances, and in one night to perfect 84,000 stúpas to contain them—which was done. There was a Rahát, called Ye-she (Yaçna, Burn. J.B., 373), who, spreading out his five fingers like the spokes of a wheel, scattered rays of light from their points in 84,000

directions, and who commanded the flying demons (Yakshas), each one following one ray, to erect a Stúpa wherever it alighted; and so throughout Jambudwípa they were raised. Now in the kingdom of the great Sung (*i.e.*, China), there were nineteen places where these rays alighted; the temple (Pao-Tsz') in the eastern capital (Lo-yang) being the first. Originally this was (or, the first was) erected at Man-shan, in Ming-chan (that is, at the modern Fung-hwa, in Chi-kiang, lat., 29.45 north; long., 4.48 east from Pekin). It was erected by Suh-wong, who ruled over Yueh-kwo (east of Chi-kiang) during the time of the Wu (one of the three kingdoms, between the Tang and Sung dynasties, 907 A.D. to 959 A.D), on the occasion of his paying respect to his ancestral tablets. It was a nine-storied wooden pagoda. It was allowed to go to ruins until rebuilt by Tai-Tsung (Yung-Loh), of the Ming dynasty (1403, A.D.).

[The above passage is confused.—S.B.]

"Jambudwípa." There is a tree to the south of Suméru, called Jambu; the country below this is therefore called Nan-chin-fan-chow (the country to the south of Jambu).

171. What wisdom there was in his golden words, the law of endless duration preserves.

Notes.—Having before spoken of the parts and portions of the instruction of Buddha delivered in his apparitional form, we come now to consider the law as it was handed down and delivered from generation to generation. Juloi having through endless ages practised this law, he now causes it to be handed down, not mutilated or broken; hence the expression, "the law of endless duration preserves."

172. The elephant king having departed, the disciple (lit. elephant's son) follows.

Notes.—Kiao-fan-po-ti (Gauvâmpati, vid. "Lotus of good law") Áyushmat was the disciple of Shi-li-fu (Śáriputra. The expression here used may signify "younger brother" as well as "disciple"). He was skilled in keeping the treasure of the Pi-ni (Vinaya, the first division of the Tri pitaka). He constantly dwelt in the To-li heavens. Ka-ye (Káśyapa) having summoned him to come to the general assembly, he then entered into a state of Samádhi (Teng), and scattered in three directions a white, mellow effulgence, and, coming before Káśyapa in the midst of the light, a voice was heard repeating the following gáthá:—"Kiao-fan-po-ti, with humble mien, worships the completely pure and ever virtuous priests in this assembly. The elephant king having gone, the elephant son

follows. The great teacher having perished (*i. e.*, entered Nirváńa), I, in return, also perish (*i. e.*, enter Nirváńa)." On this, the apparitional brightness itself died out (lit., fired itself, or was self-consumed).

173. One lamp extinguished, yet the one lamp continues by connection.

NOTES.—That which the text calls "a lamp," is the eye (*i. e.*, complete perception) of the true law of Juloi; it is hence compared to a lamp. Its use is to enlighten the dark and dissipate the gloom (of ignorance). Hence the sacred name applied to this lamp is "the inextinguishable lamp;" referring to the doctrine figured thereby. Juloi, at time of his Nirváńa, delivered his doctrines to the keeping of the great Káśyapa, who, at the time of his Nirváńa, delivered them to Ánanda, Ānanda to Chang-na-fu-so (Śanavása, or Śanakavása), and so on downwards through twenty-seven patriarchs; only one man delivered them to one man.

Kwai-Fung says, "The former patriarchs, guarding against any irregularity or carelessness by which the law might be lost, therefore handed it down, man by man, so that the world might have a sure basis of instruction; for where the lamp is preserved the light will be diffused (lit., preserving a 1,000 lamps, 1,000 lights).

174. Nor could it be but that the great Káśyapa should cause the assembly of the thousand.

NOTES.—Buddha having entered Nirváńa, all the heretics joyfully said, "The sun is beclouded; the teaching of the law will now be like fire; the source being already extinguished, that will soon be puffed out." At this time Bráhma, Śakra, and all the heavenly kings, coming, addressed Káśyapa, saying, "Since Juloi has handed down his doctrine (eyes of the true law) to you, you ought early to collect (the law into one body)." On this Káśyapa dismissed a messenger to the top of Mount Mi-lu (Suméru ?) to strike *the gong*,[1] and proclaim, "Let the 1,000 saints, who have arrived at the condition of 'wou-heou' (beyond learning) on every side, come together to the country of Mo-kie-to (Magadha), to the city of Chang-Man (*i. e.*, of excellent grass, viz., Kuśinara, or rather Kuśágára, *i. e.*, Rájagŕiha), at the Pi-pa-lo grotto (Pippala, ficus religiosa).[2] At which place, having requested Ajasat to erect a sandal-wood barrier, they compiled a body of true doctrine.

175. Ánanda with the thrice-gifted thunder-voice.

[1] Ghaṇta, a bell. Vid. this legend, Jul., iii, 34. [2] Vid. Jul., iii, 24.

NOTES.—Ánanda, *i.e.*, excellent joy. He was the cousin of Buddha; after becoming a recluse, he was 20 years a follower of Buddha, as the first of the To-man (Śrávakas ἀκουσταὶ). At the time of the first assembly, they only allowed Raháts within the precincts of the enclosure; at which time Ánanda being amongst the "*oi* students" (hioh), Káśyapa bade him quit the assembly. Ánanda, fired with zeal, and grieved at the necessity of leaving, practised in the quiet of the forest the "Chung Ti" (above earth) Samádhi; and separating himself completely from all temporal anxieties, he attained at once the fruit of Rahátship. Then going to the gates without, he asked permission of the assembly to enter. Káśyapa said, that if he had attained the condition of a Rahát, he might, passing through the door, enter the assembly. Ánanda, hearing this, then entered and paid reverence to the great assembly [A wrong punctuation in original?]. Káśyapa then requested Yeou-po-li (Upali) to collect the Vinaya Piṭaka (Lin-Tsong), and Ánanda to collect the Sútra Piṭaka (King-Tsong). On Ánanda ascending the throne (rostrum), the community felt three doubts: 1. Whether Buddha would come again?—2. Whether he would come in another place?—3. Whether Ánanda would arrive at (or had arrived at) the condition of Buddha. But when Ánanda began, "Thus have I heard" (the formula with which all the Sútras begin), then all their doubts disappeared.

The expression "thunder-voice" is borrowed from the phrase used in the "Fah-kü" Sútra: "The Bhikshu Ma-ha-lu-ta (Mahárátha) had a voice like the sound of thunder."

The expression "thrice gifted" (lit., three wheels) refers to the "sound," "pronunciation," and "words." With respect to "sound," there are five excellencies:—1. Deep as thunder.—2. Distinctly heard at a distance.—3. No confusion, *i.e.*, clear enunciation. 4. Thrilling the heart of those who hear.—5. That, being enunciated, they be easy of explanation. Ánanda possessed all these excellencies, and hence the expression in the text, "thrice-gifted thunder voice."

176. Chang-na (Śanakavása) exhibited himself in a condition of Samádhi, which has relation to the future.

NOTES.—When Juloi was alive, he was passing through the kingdom of Mo-to-lo (Mathúrá), when, pointing to a verdant grove of trees, he addressed Ánanda as follows: "This mountain is called Yeou-lou-cha (Uraśa?);[1] after my Nirváńa, there will be a Bhikshu

[1] This legend is evidently connected with that recorded in Burnouf (J. B. 378),

named Chung-na-fo-shan (Śanakavása) who shall erect a Ka-lum[1] (Sangharáma) here, and explain the law for the benefit of many." So after Juloi's Nirváńa, Ánanda had a disciple called Chan-na-fo-shi, to whom, when he (Ánanda) was about to enter Nirváńa, he committed the treasure of the law. He was, as Buddha declared, *eminent in teaching apparitional births.* Now Śanakavása converted a certain eminent person (sthavira), called Yeou-po-kun-to (Upagupta), who became his follower. One day he came to where Chang-na was sitting on his couch; Upagupta and the other disciples not understanding the entire doctrine, their minds were uneasy. Then Śanakavása, raising his hand in the middle of the air, there fell, like rain, a shower of sweet dew (amŕita), and there appeared 500 doors of the law (methods of salvation?). Upagupta not understanding, Śanakavása said, "When Buddha entered on this species of Samádhi, then Mangdilyana (Muh-kien) did not comprehend it; and on his practising it, the Bhikshus did not comprehend it; and now I practise it, you do not understand it. I indeed have obtained 77,000 Pen-seng-king (Játaka Sútra) 80,000 Vinaya Sútras, 80,000 Abhidharma; you all fail to understand them; if I go, they also will follow.

177. The divining or converting rods of Upagupta, even to the filling of the cave.

Notes.—Upagupta was the successor of Śanakavása as the holder of the law. When Buddha was alive, there was a certain heretic, a follower of the Ni-kien (Nirgrantha), whose name was Sah-che (Saśi?). He was distinguished for his wisdom and power in argument, having thoroughly investigated all the Śástras. All the princes therefore paid him reverence, and made him their master. Knowing, then, the superior excellence of the Law of Buddha, he desired to seek the condition of his disciples. Coming therefore to Buddha, he asked him, saying, "If I become your disciple, shall I obtain the condition of a Buddha?" Buddha answered he would not. Again he asked if he should arrive at the condition of Śáriputra or Mangdilyana; and at last he asked if he should become as one of the 500 Bhikshus, who listened to Buddha's doctrine. To all which questions Buddha replied, "You will not obtain; but after my Nirváńa, when there are no great men (such as these), you may after them obtain so and so." Buddha,

which is made to relate to Upagupta. The mountain there is called "Urumunda" (vid. in loc.)

[1] Viz. of Nátábhatiká.

addressing the community said, "After my Nirváńa about 100 years, this heretic shall be born in Mathúrá, and named Upagupta." This name signifies "near or belonging to defence." [Upa (under) gupta (defended or protected); he was the son of Gupta, vid. Burnouf.] Having become a disciple, he obtained fruit (of Rahátship) and was the means of converting a vast number of men. This, so far, is according to the records of Buddha. In Central India, when any one who says the law and teaches the necessity of conversion, if only to an ordinary man with his wife and family, and these all arrive at Rahátship, then they throw a piece of wood into a stone receptacle. This chamber or receptacle is 2 cheung high (23 ft. 6 in.) and 3 in length and breadth (35 ft. 8 in.). At the time of Upagupta's Nirváńa, these rods had filled the chamber (or nearly filled it), so that his disciple "Tung-chau-leung (Dastaka?) used only them at (or for) his To-wei, *i. e.*, funeral pyre.

178. The beginning, indeed, near from the time of the broken bridge, affecting the mind (of Ajasat).

Notes.—The great Káśyapa about to enter Nirváńa, having delivered the law to the keeping of Ánanda, took the robe which Buddha had committed to him, and entered the Cock-foot Mountain (Kukkuṭapadagiri) to enter Samádhi, awaiting the time when Maitraya should be born on earth. But previously, king Ajasat had made an agreement, that when the venerable (Káśyapa) entered Nirváńa, he should come, and, acquainting him with the fact, take leave of him. Now the king, being asleep, did not see (Káśyapa come); but in his sleep he had a dream, that the bridge of the palace was broken; and awaking, he knew by this that Káśyapa had entered Nirváńa. Without delay he set out for the mountain, and came in front of it; but the mountain had already closed. Previously, however, when Káśyapa entered the mountain, he had expressed this wish, "If king Ajasat comes before Maitraya be born, let the mountain open." As soon then as the king arrived, the mountain opened itself, and there he saw Káśyapa, holding the robe, sitting, with devout mien, in the midst of it. The king worshipping, shed tears; and, having finished the repetition of some laudatory verses, the mountain closed again.

179. The end almost was the appearance of the flowing blood (milk).[1]

[1] If the expression used refers to the *whiteness* of the River Śwéti or Śubhavastu (the white river), then the text would be "the appearance of the river"—referring to its rising a foot, owing to the massacres. Vid. the Commentary, and compare Jul., ii. 197.

NOTES.—In the order of transmitting the law in India, the 24th patriarch was the venerable Sse-tsen (Sitsi). He was dwelling in Ki-pan-kwo (Ki-pan, according to Rémusat, is Kandahar). Knowing the calamities which impended, and from which he could not escape, he delivered the garment and the gáthá to his disciple Po-sz-to Áyushmat (Bashiasita), and said, "I know there are calamities impending. You must, therefore, go to another country to practise renovation (or to undergo transmutation, *i. e.*, to die)." After this, the heretics increasing in power by flattering the king Mi-lo-kieu (? for Mo-hi-lo-kiu-lo, *i. e.*, Mahirakula. Vid. Jul., ii, 190), the kings lost the true faith, overturned the law, destroyed the temples, and murdered Sse-tsen (Sitsi). The waves of the "Peh-ü" (the Śwétí, or Śubhavastu) rose several feet (Jul. ii, 197), owing to the massacres of people. This was the end of the transmission of the law in that country.

180. The vessels, indeed, may be different; nevertheless, the water must be the same.

NOTES.—The Ágama Sútra says, "Ánanda delivered the law of of Buddha just as different vessels are employed for holding and carrying water; but though the vessels differ, the water is the same."

181. There may be different flames of lamps, but the illumination which results is all one.

NOTES.—The lamp may be compared to the different men through whom the law was transmitted; the brightness is the law of Buddha itself. Now, although there may be 1,000 individual lamps, yet the illumination is the same from all.

182. Hence, in the mysterious subsistence which pervades the true void, as taught by the Great Vehicle, there are the different schools of Manjuśrí and Maitraya (Manchu and Mi-li).

NOTES.—"The mysterious subsistence of the true void" is the highest flight of reason in the "Great Vehicle." So, although the law of Buddha have but one taste, yet, owing to the different principles which actuate the minds of those who receive it, there cannot but be differences. So Manjuśrí founded the school, called that of the One Nature. This is only in confirmation of what was already taught by the "true theory," that all creatures possess the one nature of Buddha. But Maitraya Bódhisattwa founded the school of the Five Natures, saying that there was one nature of the Śrávakas;

a second of the Pratyéka Buddhas; a third of the Great Vehicle (*i. e.*, Bódhisattwas); a fourth of the Unfixed Nature, that is to say, in the midst of the eighth degree of knowledge (ashta vijnána. Vid. this described in the 2nd vol. of the Fah-kai), there are remaining certain influences of the three vehicles which exert their power as soon as a mode of preparation is commenced; hence the expression "unfixed." The fifth nature is that which is perfectly unfettered and pure, *i. e.*, when in the midst of this eighth knowledge there be no adverse influences, but be as it were a lump of clay or pottery, without stone or grit. As the "Chen-Kai" Sútra says, "The man whose nature is without remnants, or influences from without, only requires to have the "karma" or root of a man or Déva, and then he will be perfected beyond improvement."

183. And with respect to the Little Vehicle, there was the torn marble and the divided gold. The Chang-Tso (Sthaviranikáya or Kásyapiya) and the Tai-Chung (Mahásangika) originated these schools.

NOTES.—The doctrine of the "Little Vehicle."—The mode of deliverance instituted by Buddha in consideration of the unprepared state of men's minds, was originally one and the same in its standard. But after the Nirváńa of Buddha, according to the different peculiarities of the teachers, distinctions arose and prevailed. The San-Tchong-Ki says, "When Buddha was living, there was an eminent person who dreamt that his valuable mantle divided itself into five parts. Being anxious, he asked Buddha the meaning of this dream. Buddha replied, 'This signifies that after my Nirváńa, the Vinaya Piṭaka will be divided into five parts.'" Again the Mün-King (Nidána Sútra) says, "King Bimbasára dreamt that his golden sceptre broke into eighteen parts. On asking Buddha the meaning of this, he said, 'The Little Vehicle shall be divided into eighteen schools.'" The Chang-Tso (Kásyapíya) and Tai-Tchung (Mahásangika) were the two original schools.

[End of Vol. II. in the Chinese.]

184. Then there was the opening out of the ten branches.

NOTES.—This is an introduction to the eminent sages who composed treatises (Śástra) for the purpose of overcoming error and establishing truth. Now these ten branches are:

1. Śataśástra? Pe-fah-lun.
2. Panchaskandhaka Śástra. — Written by Tien-ths (Vasubandhu).
3. Hien-Yang-lun (vid. Jul., ii, 286, who gives the name Hien yang ching kiao lun, *i. e.*, "treatise to enlighten the true doctrine," but does not add the Sanskrit); and
4. Mahayána samparigraha Śástra. — Both written by Asanga Bódhisattwa.
5. Samyukta Śástra? Tsa-tsi-lun? — Written by Asanga (Won-Cho) Buddhasinha (Sse-tsen-kio), and Hin-hoei (?).
6. Pin-chung-pien (Tattwasatya Śástra?). — Written by Asanga Bódhisattwa.[1]
7. Eul-shih-wei-shih.
8. San-shih-wei-shih (?).—Written by Vasubandhu.
9. Ta-tchoang-yen-lun (Sútrálankáratíká?); and
10. Yu-ka-lun (Yóga Śástra?).—Both by Maitraya Bódhisattwa.

185. Then there was the fragrant exhalation of the 1,000 olumes.

Notes.—Tien-thsin Bódhisattwa (Vasubandhu Bódhisattwa)[2] was, according to the common account, a younger brother of Asanga Bódhisattwa; but, speaking according to the law (in a religious sense), he was his younger teacher. In the beginning he belonged to the school which taught the existence of the exterior world (Sarvástiváda), and then he composed 500 discourses in commendation of the "Little Vehicle" and against the "Great Vehicle." There was no one in India dared to compete with him. Asanga at this time, being a Bódhisattwa of the lowest order (cho-ti),[3] perceived that the principles of his brother were now adapted to receive the "Great Vehicle." He sought an interview with him, being sick (or feigning sickness). So, when he came to lodge near the hostel where Asanga was stopping, the latter sent a disciple to meet and conduct him to his abode. And it came to pass that, on the night when these two were lodging together, the disciple, during the

[1] Probably the Madhyânta Vibhañgha Çâstra. Vid. Jul., ii, 269.

[2] Obs. that in the work we are translating, this Bódhisattwa, is always called Tien-thsin, *i. e.*, "The friend of Dévas," and not Chi-thsin, "The friend of the age." Vid. Jul., iii, 499.

[3] The "Ling-Yen" Sútra explains "Cho-ti Pusah" as a Bódhisattwa, who understands or perceives the lands of one hundred Buddhas. Jul. (?), Vol. ii., p. 15.

night, began to repeat a gáthá to the following effect:—"If a man has wished to gain knowledge of all the Buddhas of the three ages, he ought to consider the nature of the 'aggregate of laws' (the universal law or soul of the universe), (and that) all things proceed solely from the heart." Vasubandhu, hearing these words, penetrated and understood the principle of the Great Vehicle, and repented of his old animosity against it. Considering what reparation he could make for his fault, and regarding his tongue as the cause and root of his offence, he took a knife, and, raising his hand, was about to cut his tongue out. Asanga, from a distance, perceiving his design, arrested him in the act, and signified thus, "You now understand the principle of the Great Vehicle; formerly with your tongue you maligned that system: now, with the same tongue, you ought to extol it. This is the amends you should make. But if you cut out your tongue, and become specchless, how can you pay this worthy recompense?" Vasubandhu listened to this advice and desisted. Passing on, he had an interview with his master, and being perfected in his principles, composed 500 treatises in favour of the Great Vehicle. Hence Vasubandhu is spoken of as the writer of 1,000 Śástras.[1]

186. Ma-Ming (Aśwaghosha) and Lung-shü (Nágárjuna) were connecting links in this garland of sweets.

Notes.—These two Bódhisattwas at first belonged to heretical schools; but were both converted to the true law. Leaving their homes, they manifested the doctrines of the Great Vehicle, being both writers of Śástras.

187. Won-Cho (Asanga) and Tien-thsin (Vasubandhu) disseminated their fragrance.

Notes.—These also were writers of distinction. (See above, 185).

188. Then also Ti-po (Déva Bódhisattwa), boring out the eyes (of the idol), waxed angry at the deceit.

Notes.—Ti-po Pu-sah (Déva Bódhisattwa) was a disciple of Lung-shü (Nágárjuna). He was possessed of great power in argument, and the valour of his name was diffused through the five

[1] This legend is somewhat differently related in Jul., ii, 273, 274. It proves at any rate that Tien-thsin (the friend of Dévas) is Vasubandhu (the friend of men).

Indies. Dwelling in Southern India, when he first became a convert to the law, men generally had not attached themselves to the faith. There was in this country a temple (miau: compare Japanese miya) of the Déva Mahéśwara (Śiva), which was possessed of an image cast from gold, the height of which was two cheung (23 feet 6 inches). The eyes of this idol were made of precious crystal, and by the use of machinery were capable of movement; so that the people dared not look straight at the figure. Déva Bódhisattwa, entering this temple, looked at the idol with scrutiny; all the worshippers were now assembled; at which time the idol moving its eyes towards Ti-po, fixed them upon him. Then Déva Bódhisattwa, exclaiming, said, "A spirit is a spirit! What then is this insignificant object! A spirit ought by his spiritual power to influence men by his wisdom to overcome gross matter. But to magnify himself by assuming a shape of yellow gold, or to exert his influence by the dazzling of crystal eyes,—this surely is beyond the province of (*i. e.*, not fitting) such a being." And with that, going up to the idol (lit. ascending by a ladder), he struck out its eyes, and so exposed the fact of the absence of any spiritual qualification in the (so called) spirit. The voice of Déva Bódhisattwa affecting an angry tone is alluded to in the text, where the word "hi" is employed. He used this method and angry tone in order to excite the people, who had not yet placed their faith in the law, to do so at once.

189. Then again, Chin-na (Jina), and the shrieking rock, with its departing sound (lit., flying voice).[1]

Notes.—"Chin-na Pu-sa (Jina Bódhisattwa)," a great master of Śástras. Early in the (present) Kalpa there was a heretic called Ka-pi-lo (Kapila), who practised a worldly form of religious composure (Samádhi) and obtained the five divine faculties (panchábhijnána). He composed a treatise called Sang-kie Sah-tu-lo (Śánkhya Sútra) that is to say, "a discourse on numbers." Fearing that men hereafter would pervert his system, he went to Máhéśwara Déva (*i. e.*, Śiva) and besought him for the power (lit. magical power) of lengthening his life. The Déva said, "I will transform you into a substance that will endure for an immeasurable period of years, an imperishable rock." So he made it generally known among his followers, that he was about to be transformed into a stone; and if any man confuted (or opposed difficulties) to his

[1] Vid. this phrase explained, Jul., ii, lxv.

treatise, that they should bring the book and place it on the stone, and that he would then answer the arguments himself. Now Chin-na (Jina), having composed the Ma-ming-lun (Hétuvidyá Śástra) for the purpose of destroying all false systems of deliverance (or, of "explanation"), and knowing that this stone was (the transformed appearance of) that heretic, wrote certain opinions, and placed them on the top of this stone, in order to destroy his theory; to which an answer was emitted as usual. Then Jina again placed other written opinions in answer to the reply of the heretic; and after some delay, the voice came again and answered up to the fourth difficulty; this the stone was unable to answer. On which, it suddenly sent forth one prolonged shriek, and was broken in pieces. Hence, in India, they say, "Jina was the victor (lit., able to master) over the shrieking stone."[1]

190. Then there were the 100 lines, which dissipated altogether the heretical schools.

Notes.—The teacher of Śástras, named Pi-lo (Vimalomátra?), was a disciple of Ma-ming (Aśwaghosha). He made 100 lines composing a Śástra called "Won-'go" (Anátma, the non-existence of "I"). He arrived at the point of explaining the character of "I," which no heretic was able to overthrow.

191. And there were the laudatory sentences of the ten masters, which the gáthás hand down as a bequest.

Notes.—Vasubandhu composed thirty verses, called "Vidyámátrasiddhi (Wei-Shi)."[2] Ü-Fa (*i. e.*, Dharmapála) and ten great masters of Śástras, all made commendatory verses to complete this work, which as a whole, is now called Vidyámátrasiddhi Śástra.

192. Then there was hearing the Sútra in ascending up by night to the Tushita heaven.

Notes.—Asanga Bódhisattwa, having entered the "Fa-kwong" Samádhi (Dhárma-Prabhása Samádhi?), in the night ascended to

[1] There are some particulars relative to Jina Bódhisattwa in Jul., iii, 105, 153. The story about the elephants in the latter reference, may have some connection with the legend of the text. Obs. The translation of the latter portion of the commentary is only a substance of what is said. There is a difficulty in one word of the original, which is a corruption or a misprint, and throws the translation out.

[2] Is this "Vidyâ mâtra siddhi tridaça çâstra kârikâ." Jul., iii, 503?

the Tushita Heaven, and respectfully asked Tsz'-shi (Maitraya) to explain the system of the "Kin-Kong (Vajrachhedika)" Sútra. Maitraya then repeated eighty gáthás, illustrating the great principle of this work. Asanga taking up eighteen points of this exposition composed a Śástra in two volumes; and Vasubandhu, taking as his theme twenty-seven points of uncertainty in the same exposition, composed a Śástra in three volumes.

193. Then there was the waiting for Maitraya, and entering the cave of the Asuras.

Notes.—Ming-pien lun-sse (*i. e.*, the Master of Śástras, Bhávavivéka. Julien gives the Chinese equivalent of this name "thsing pien," instead of "ming pien;" but the legend is the same. So there can be no doubt the persons alluded to are also one), wishing to obtain the secret of long life, in order to await the time of Maitraya's birth in the world, went into Southern India, and standing in front of a cave belonging to the Asuras, repeated some dhárańí, called "Kin-Kong (Vajrapáńi dhárańí)," being perfect in their repetition, even to a grain of white mustard seed.[1] He then knocked at the door of the cave, and the rock-door immediately opened. Then Ming-pien (Bhávavivéka), taking up his robe and arranging it properly, entered the cave with six other men; when the rock-gate closed behind them.

The word "Asura" means "A spirit whose nature is not perfectly upright (lit., a not correct, true, spirit)."

194. Then there was the vow to cut off the head, according to the compact.

Notes.—Déva Bódhisattwa, having received the law which requires a man to leave his family (*i. e.*, the law of Buddha), in the middle of the four great highways of India, from a lofty throne

[1] M. Julien, in translating the legend (iii, 115), has rendered this part thus: "He recited these magical prayers over a grain of mustard seed, which he used (et s'en servit) to knock at the rock." I have ventured to render it in another way: "He recited these prayers even to a grain of mustard," *i. e.*, to such a nicety that he did not mistake so much as a grain of seed; or, as we say sometimes, "he recited so and so to an azimuth," *i. e.*, perfectly.

This legend will be found in extenso in Julien (ut suprâ.)

I would suggest, with diffidence, that the usual explanation of the passage ἐὰν ἔχητε πίστιν ὡς κόκκον σινάπεως (Matt. xvii, 20) as signifying the "*least* faith" is not so apposite to the sense of the passage, as if it were explained in accordance with the above, as denoting "*perfect* faith,"—"*faith to a mustard seed.*"

which he had erected, proclaimed these three propositions: 1. "In the midst of all holy sages, Buddha is chief:" 2. "In the midst of all laws, the law of Buddha is chief;" 3. "Among all the modes of saving the world, the community (of Buddha) is first." "If any of the doctors (said he) of the eight regions, are able to overthrow these theses, I will pay my head as the stake." Then having sounded the gong (ghaṅṭa, a bell) all the doctors of the eight regions came together, in an assembly, and each one fixed this as the compact: "If I do not overthrow these theses (lit. system), then I will also pay my head as the forfeit." And so for three days they contended in their discourses, one after another (lit., guest and host), until the doctors of the eight regions gave up their propositions, and were all overthrown. Each of them then proposed to cut of his head; but Déva replying, said, "The law which I profess, is that which teaches how the universe is animated by a virtuous principle of life; this law requires not that you should cut off your heads, but your hair. You then become as those who are dead (*i. e.*, to the world)." On this, the doctors of the eight regions all cut off their hair, and became disciples of Buddha.[1]

195. Then there was the gold carried upon the elephant, and the request for explanation.

Notes.—Vasubandhu Bódhisattwa, on account of the community, was in the habit of discoursing on the Pi-cha-lun (Vibhásha Śástra). On a certain day, when he was discoursing on a particular thesis, he took the opportunity of composing a gáthá bearing on the subject; he inscribed it in letters on a sheet of red copper,[2] and placed this tablet immediately over the head of an elephant; he likewise took fifty pieces of gold, and suspending them above the elephant's tail, seated himself in the middle; when, striking on a gong (ghaṅṭa), he proclaimed, and said, "Whoever is able to overthrow this thesis shall have the gold." In all the kingdoms no man was able to overthrow his system; and so, taking the gáthá and the gold, he went on to Ki-pan (*i. e.*, Kandahar); there also none of the doctors of the Vibhásha were able to explain the subject of his argument. Then these doctors, taking in addition fifty pieces of gold, came and offered them to Vasubandhu, asking him to

[1] This legend is differently related, Jul., ii, 435. According to that account the discussion took place in the Ghaṅṭa Sangharáma, in Pâṭâlipouttra (Pauta.) Vid. as above.

[2] On the use of red copper for this purpose, vid. Jul., ii, 178.

write an explanation of his theory; on which Vasubandhu composed a lengthened series of lines on this subject, which is now known as the Kin-she-lun (*i.e.*, Abhidharma Kósha Śástra.)

196. Then there was the gift of authority to rule a city.

NOTES.—The Lun-sse (Doctor) Mo-ta-na was of very eminent talent in dispute; and having in discussion gained a victory, Pan-po-sha-lo (Bimbasára) Rája presented him with a town to govern.

197. Then there was the victory and the setting up of streamers.

NOTES.—The work entitled "Records of the Law (Fuh-fah-tsong)" says, "Ma-ming (*i. e.*, Aśwaghósha) Bódhisattwa, who succeeded Fu-na-yi-shi (Funayashe, the 11th patriarch), having gained a victory (in a discussion) on the law, they erected great streamers, called flags of the law (Dhármakétu)."

128. Then there was the discourse on the hidden sense of Prajná, called the "Lamp."

NOTES.—There was in Southern India, a doctor Ka-pi, who composed a treatise, called Po-ye-tang (lamp of knowledge), professing to be the exposition of that wisdom which lies at the bottom of all principles, and is itself indivisible and simple. This wisdom, having the power of perfect rest, and yet dispersing its rays of brightness, is likened to a lamp.

199. And, finally, the work written in opposition to the Kin-she (Kósha), which was called "Po (hail)."

NOTES.—There was anciently a doctor of Śástras in Cashmere, called Chung-hien (Sangabhadra), who, having seen the Kósha Śástra, written by Vasubandhu, composed 5,000 gáthás to overthrow its false system; and he called his work "Kin-she-po-lun" (Abhidharma-Kósha-Káraká Śástra), taking the idea of his title from the hail which is able to destroy seed, grain, fruits, and flowers. Then, wishing to confirm his reputation, he took one of his disciples to carry the work, and went to meet and expostulate with Vasubandhu. Vasubandhu, for the sake of all men in the kingdom who were of unsettled faith, entered into a discussion on the subject or rather, was at this time engaged in various discussions (*i.e.*, with the opponents of the law in various places), so that they did not immediately meet. But it came to pass, while Sanghabhadra was lodging at an hostel near the place where Vasubandhu was, that

he suddenly arrived at enlightenment; and angry at not having before gained this knowledge, he immediately prepared a written discourse, and sent it with his treatise by a disciple to Vasubandhu. The epitome of this discourse is as follows:—"I composed this treatise without rightly measuring my strength. My wisdom is little, my ambitious design was great! But now death has come to my door! By your delay, great Bódhisattwa, I have obtained enlightenment. If I only, by this confession, preserve my honourable name, then death will come without regret." Vasubandhu, having read the treatise, saw that there were many sentiments in it agreeable to reason; and, considering that he knew his faults, he named it "Chun-tching-li-lun (Nyáyánusára Śástra)."

200. It could not be but that the Tchou-to-i-chih (? dwishashṭi-dṛishṭa, *i. e.*, the sixty-two heretical sects.—Vid. Burnouf, Lotus, 356) should all, in the end, return to the One Source, from the advocacy of actual existence, and through the maintaining of mere emptiness, to the refuge of the 10,000 excellencies.

Notes.—"Tchou-to-i-chih," *i. e.*, the heretical schools of the Little Vehicle: the advocacy of actual existence and the maintenance of a perfect void. These both refer to limited perception; but the "one source of 10,000 excellencies" refers to the true theory of the real nature explained in the Great Vehicle.

201. And so, from the time of the Shang and Chow dynasties, when the rainbows were seen spreading far and wide,

Notes.—The miscellaneous records of the Chow dynasty, relate: "In the 52nd year of the reign of Mo-Wang, of the Chow dynasty, the style of the year being 'Yin-Chin,' the 2nd month, the 15th day, a white light appeared in the western regions, shining from north to south. The king asked the Tai-Sz' (chief historiographer?) what was the meaning of these signs? On which he answered, 'These are the signs of the Nirváńa of the Holy Sage of the West.'"

202. To (the time when) the illustrious emperor of the Han dynasty saw the golden man,

Notes.—The second emperor of the latter Han dynasty, named Ming-Tai, (of the style) Wing-Ping, in the second year of his reign, saw in a night dream a golden man, 6 cheung in height (70 ft. 6 in.), flying, who entered the hall of audience, bright and shining to look at. In the morning he asked his assembled ministers the meaning

of this dream. On which, one of the literati, "Chung-y,' said respectfully, "There is a holy man in the west called Fuh (Buddha); this person, whom you saw descending towards you in your dream, must be that same Buddha." The erudite "Wang-Tsun" also said, "Your minister finds in the records of the Chow dynasty, that the Tai-Shi Sou-yu informed the King Chow, saying, 'There is a sage born in the western regions; a thousand years hence, the report of his teaching shall arrive in this land.' Your Majesty's dream does certainly relate to this prediction."

203. The teaching indeed spread through Shin-Chow (*i.e.*, India), and the report spread to Fa-Hin (*i.e.*, China).

NOTES.—The explanation of the words "teaching" and "report," is this—all the classics in which the teaching of Buddha is recorded, and which are known in this region, are founded on the exact words of Buddha himself. Hence, the Wei-chi-lun (Vidyá-Mátra-Siddhi) says, "The four expressions (fah)—report (lit., voice), name, phrase, exposition (man, *i.e.*, any learned work),—are the body or substance of (Buddha's) teaching." At the time of Ming-Tai, of the latter Han dynasty, the teaching and worship of Buddha was introduced into China. [See the translation of this account in my previous paper, Journ. R. A. S., vol. xix, p. 337—S.B.]

Now there was a high priest (ko sang) of the Tong dynasty, a master of the "Great Vinaya (Pitaka)," named Tau-Sün, who dwelt all his life at Nan Shan (the southern hill). By his great distinction for keeping the precepts, he had received the title Ko (high). Vichamen, the king of the northern heaven (*i.e.*, of the north of the four heavens round Mount Suméru), constantly deputed two Dévas to look after his welfare. Now Sün one day, as he was walking, missed his footing, and would have fallen, had not the Dévas raised him up on his feet. Then, making their bodies visible, and because he asked, they declared themselves to be Dévas; whereupon Sün asked them, saying, "How is it that Sü-Yu and Yih-To, of the Chow dynasty, and Fou-Y, and Wong-Tsün, of the Han dynasty, and Hou-Chai, of the Wai dynasty, all of whom knew nothing about Buddha's law, were yet able to know the time of the birth and Nirváńa of the sage, anticipate the arrival, and detect the superiority of the law of Buddha?—What men were these?" The Déva, Hwang-King, answering, said, "These men were all Dévas. The law of Buddha being about to reach this land, the Dévas came down as deputies to the country, to manifest and make plain the law of Buddha."

204. (Wong) Poh, favoured by being born in the latter times, receiving only the veritable words, though he connected and compiled the golden sentences (of Buddha), yet residing at Piú Ling, saw not the generous sign.

NOTES.—After the Nirváńa of Śákya Tathágata, the true law lasted 500 years, the law in which visible images were worshipped 1,000 years, no law 10,000 years. The third generation of the dynasty of the Tang emperors,[1] would just bring us to the end of the law of images (period of worship paid to images); hence, the phrase, "latter times."

The "veritable words," alluded to in the text, are those of the three Piṭakas. The "golden phrases" are those of Buddha's "golden" mouth. The "generous sign" is the circle between the eyebrows (Úrná).

205. All immediate revelation has ceased. The systems of religious instruction emit their light. The words bequeathed to us as depositories of truth are not shaken, but are treasured in their several collections.

206. His apparitional forms, all founded on his (one) original (nature).

NOTES.—The "apparitional forms" allude to the three species of Buddha's body [viz., Ying-shan, pao-shan, fah-shan, which are the body assumed by Buddha when he was born as Śákya Muni; the body commonly called Lu-che-na (Rójána), emitting numberless rays; and the universal body supposed to pervade the universe, and otherwise called Pi-lo-che-na (Vairójana, "brightness everywhere diffused")]. The one "original body" refers to the one true "Fah-kai" (Dharmadhátu), *i.e.*, "soul of the universe."

207. He arrived at perfect merit in this Bhadra-Kalpa, as was predicted.

NOTES.—Juloi, having passed through three asankhyas of years in preparing himself by practice of the innumerable actions included in the six páramitás, and having been born in every single portion of this great chiliocosm, arrived, as the text says, at perfect merit. Jin-Teng Fuh (Depankara Buddha) had predicted that he should complete his course of preparation in the Bhadra Kalpa.

[1] A.D. 650. This would make Buddha's birth about 850 B.C.

The Chinese "Kin-ki" is, in Sanskrit, Poh-to-kah-po (Bhadra Kalpa), *i. e.*, "the period of sages." It is a species of cycle.

208. These infinite lines of conduct (actions in previous births) did all manifest the one true system.

NOTES.—The true Buddha is not anything exterior to us. Every sentient creature has individually Buddha in himself; but from the constant turmoil of empty and false opinions, men have not yet realised the truth of this.

Pu-sah (Buddha), by the various events of his previous existences, elicited this true principle of our nature; and having completed his course, it shone out in his divine reason, as the brightness shines in the diamond.

So that his "conduct" was like the powder which is used for brightening a mirror.

209. The treasured merit of Asankhyas.

NOTES.—The Sanskrit "O-sang-ki (asankhya)" means "an endless number of years." It is now contracted to San-kya. Pu-sah (Buddha, when a Bódhisattwa), in his various exercises of the six páramitás, is spoken of as obtaining "wild-goose merit." (This extraordinary phrase may allude to the endless succession of these birds, which visit the same regions year after year. The pagoda at Nankin was sometimes called the "wild-goose pagoda." See the phrase explained in the article on pagodas, by Dr. Milne, Transact. of the Chinese Branch of Royal Asiatic Society.—S.B.)

210. For the sake of the law he was manifested in the world; descending in a spiritual form (divine form?), he appeared from the divided (side of his mother).

NOTES.—The Won-Shang King (Anuttara Sútra) says, "If there had been no old age, sickness, and death in the world (these three existences are called 'laws,' in the text,—'Dharma'); then Juloi would not have appeared, or taught us to overcome these things."

211. His brows arched like the bow of Śakra.

NOTES.—The Fah-yen Sútra says, "The delicate filaments of his eye-brows, arched like the bow of Śakra." The "bow" of which the Sútra speaks, is the rainbow.

212. His eyes ribboned (or ribbed) like the leaf of the blue lotus.

NOTES.—Chan-fah-sse says, "In India there is a blue lotus, its leaves are adorned by transverse streaks of blue and white." This is one of the "marks" in the eye of a "great man"; hence the comparison of the text.

213. The Ṛishi, divining his fortune, laments (at his own misfortune. Vid. *ante*, 23). The Dévas contend for the honour of paying him honours. His head sprinkled with water, the flying wheel proclaimed the birth of a Chakravartti.

NOTES.—The word "tih, a scroll," is used to signify the silent way in which this announcement is made. "Sprinkling the head," refers to the fact that when the heir of a Chakravartti is proclaimed successor to the throne, his father, taking water brought from the four seas, pours some of it on the top of his son's head, and then crowns him. At this time, the "seven precious things" appear of themselves, coming from and through the air, and the "golden-wheel jewel," flying, passes over each of the four empires; by which they are advertised to submit to his sway.

214. Descended from the illustrious race (mahá samata) of the Sun in the line of Sse Tsen Kih.

Buddha's family name was Súrya (Sun) Déva. "Sse-tsen-kih (Sinha Okáka?)," one of the descendants of the above—the grandfather of Buddha.

215. Illustrious men were appointed to instruct him.

NOTES.—The Lálita Vistára says, "The Royal Prince (Kumára) when seven years old, entered on his course of instruction. The king appointed the Brahmin Pi-che-mi-to-lo (Viśwa-mitra) to teach him literature, Daṅḍapáṅi to instruct him in military art, and Arjuna in figures. Now, although these teachers were appointed, being Dévas in disguise, yet the prince was perfectly master of the subjects they taught; for he possessed that perfect wisdom which was intuitive to him, and born with him, and which cannot be imparted by any teacher. It may be asked, however: "If this supreme wisdom belonged to him by nature, or of itself, is not this in support of those heretics who teach that all things result from a fixed and necessary succession (or that things are *as* they are, of themselves)?" To which we answer, "No, indeed! for this inborn wisdom of Buddha is that which is necessarily inherent in him; but although we do not say it was born from any cause, yet we assume a cause from which its manifestation proceeds. Hence the Lotus

says, 'The principles of Buddha (in the mind) are excited by influences.'"

216. Seizing the bow he alone could thrum the string.

NOTES.—The Classic (Lálita Vistára) says, "The prince, when fifteen years old, entered on trials of strength with all the members of the Śákya family. Then he ordered to be brought to him the bow belonging to his ancestor, the Chakravartti, which was in his temple; no one could pull the string of this bow. Then the prince, sitting down at his ease, pulled the string, and curved the bow to its full extent—thrumming the string with his finger. The sound, extending far and wide, shook the air like the thunder. Thus he conquered all in the trial of strength."

217. Whilst making his tour of inspection he was brought to reflection by seeing the sick man and the corpse; passing out of the city, he left his attendants and his wife (or his faithful wife); he cut off his flowing locks with his own precious sword; exchanged his clothes with the hunter whom he met; dwelt in the retreats familiar to the roaming deer; reduced his body by austerities to a mere shadow. He partook of the offering of wheaten flour, having discarded all human knowledge. Sitting on the mat, he shook the kingdom of Mára, coming forth from the trial clean as the water-lily emerges from the water. Bright as a mirror was the opening of his wisdom's store! deep as the sea! high as the mountains! How vast his attainments (lit. the thunderings and lightnings of his accomplishments)!

NOTES.—The great Vibácha Śástra says, "Juloi entering on the vacant region of the incomplete Nirváńa; exerting the influences (lit. exciting the clouds) of his vast compassion; flashing out the lightnings of his ineffable wisdom; shaking the void with the thunder-voice of which we cannot partake (or, the thunder voice of the "No-I," referring to the principal doctrine of the Prajná Páramitá system; the absence of all "ishness," *i. e.*, individuality). The expression "Tsz" refers to sustaining the four theses without an error. The expression "Tsit" is, to be able to crown the seven theses by an invincible argument. (I cannot explain these terms.—S.B.) Juloi possessed all these faculties in argument. Knowing, therefore, all the names, qualities, divisions, and characters of all the laws (*i. e.*, all possible existences), he rejoiced to speak of them in a subtle manner; not fearing to lose anything, or drop a thread of the argument—so perfect were his powers of distinction.

218. There was the development of the teachings of the three periods.

NOTES.—There are three distinct periods of Buddha's teaching. The first, when he taught the real existence of matter. The second period was that in which the empty character of all existences was taught, destroying the defects of the former system. The third period is that which includes the "middle doctrine," because it corrects the faults of the two former. Now it may be asked, since the object of Buddha's manifestation was of such vast moment, how was it he employed his first efforts in teaching men the real existence of matter. To which we reply, that during this first period his object was to recover many of those who where deceived by heretical teachers. If he had, at this period, promulgated the law of the fixed standing point of the Great Vehicle, men, whose principles were weak, would have fallen into the guilt of reviling the whole system.

219. Every species of being was able to receive his doctrine.

NOTES.—The Wei-Ma King (Viyukta Sútra) says: "When Buddha delivered the law in his peculiar voice, all different species of beings were able in their different orders to receive and understand it; hence it is said, 'the one voice of his mysterious utterance conveyed to every creature perfect comprehension of his doctrine.'"

220. These were the satisfactory replies to the four queries.

NOTES.—The Chi-to Śástra says: "At the time when Buddha entered Nirváńa, Ánanda proposed to him four questions: 'After your Nirváńa, by what shall the body of the Bhikshus (*i.e.*, community) be governed?' To which Buddha replied, 'By the precepts.' The 2nd question, 'And on what shall they be fixed and abide as a reliance?' Buddha replied, 'They shall rest on the four Nim.' The 3rd question, 'How shall the Bhikshu, possessed of a vicious disposition, be able to conquer it?' Buddha replied, 'By the practice of enlarged charity.' The 4th question, 'And how shall all the Sútras commence?' To which Buddha answered, 'They shall commence in this way! Thus have I heard.'"

221. Then were the ten Ŕishis converted, following closely on his Nirváńa.

NOTES.—(Vid. supra.—S.B.)

222. Then he delivered his prediction relative to the succession of Tsz-shi (Maitreya).

NOTES.—At the Nirváńa of all the Buddhas who appear in the world, they must predict that a certain Bódhisattwa will succeed after a certain number of kalpas, and also in what place he will arrive at perfect wisdom—what law he will deliver—how many converts he will make—and what his present name is. Buddha Śákya predicted all these things concerning Maitraya.

223. Reposing under the "ngo" tree (Salus Shorea-robusta) at the opening of spring.

NOTES.—The "ngo" tree is the Sála tree.

224.—There he held the napkin preserved after the burning pyre, and the brilliant relics (shi-li) left by his mercy, as an object of worship.

NOTES.—The Sanskrit word "shi-li-lo (śaríra)," now contracted into "shi-li" in Chinese, signifies "bone-body." The reason of this designation is not sufficiently plain. . . . It is also called "To-to" (data?) *i.e.*, not to be destroyed. There are two sorts of these. 1st. A perfect body; 2nd. A broken body. Of the latter there are three sorts: 1. A bone of the white colour. 2. A flesh śaríra of a red colour. 3. A hair śaríra of a black colour.

The śaríras of the body of Buddha alone are of five colours, possessing the power of transformation, and unable to be destroyed —either by time or violence. This is the reason it is called To-To (data?)

225. I, the solitary one, born in the last period, fortunate in partaking the refreshing showers of his traditional teachings.

NOTES.—The "solitary one" refers to the fact that Wong Puh was the last of his family. The "latter times" refers to the period after the term of image-worship; the doctrines of Buddha's teaching are alluded to in the expression "traditional showers;"—the latter word "showers," alludes to the manner in which this teaching distilled, as it were, a falling rain, from heaven.

ART. IX.—*On a newly discovered Bactrian Pali Inscription; and on other Inscriptions in the Bactrian Pali Character.* *By* Professor J. DOWSON, *Royal Staff College.*

[*Read 16th February*, 1863.]

IN January, 1862, Mr. A. A. Roberts, of the Bengal Civil Service, presented to the Society two copper plates inscribed with Bactrian Pali characters, said to have been found at Hussun Abdal, near Rawal Pindee, in the Punjab. These plates were submitted to the examination of Mr. Norris, and that gentleman at once picked out the names of Takhaśila nagara (Taxila) and Śákya-muni, proving the inscription to be one of more than ordinary importance. Having made a transcript of the document, he wrote a few notes upon it which were read at one of the Society's meetings, and he then suggested that the plates should be sent to me. The interest I had taken in these Bactrian inscriptions from the time of our joint labours on the Kapur di Giri edicts was well known to him, and was sufficient to ensure a careful if unsuccessful consideration of the newly-discovered inscription. In this recommendation the Society acquiesced and placed the plates at my disposal for examination and report. I now propose to state the results of my investigation.

A very short examination satisfied me of the value of the record, and of the great service which Mr. Roberts had rendered to Palæographic science in preserving this relic and in making it available for the furtherance of our knowledge of the somewhat restricted but greatly perplexing stock of Bactrian Pali records. The inscription of Kapur di Giri, with all the assistance it received from two independent versions in another character, has in many points baffled the learning and industry of Wilson and Burnouf, and I know of no inscription in this character of which, up to the present time, a complete and convincing interpretation has been offered. The one now before us has enabled me to understand many things in other inscriptions of which I was in doubt or ignorance before, and, above all, it supplies the long-desired key to the Bactrian system of numbers. Encouraged by the new light which it

affords, and emboldened by the very unsatisfactory condition of Bactrian antiquities, I have extended my enquiries to several other inscriptions in the Bactrian character.

Mr. Thomas, with the consent of Mr. Austin, has kindly placed at my service the two plates of inscriptions which appeared in his edition of Prinsep's works. These two plates, and the additional two now published, contain nearly all the Bactrian inscriptions which have been made known. I propose to go through the whole of these, and although I have no expectation of making all things clear, I hope to help the advance of knowledge by a detailed statement of the results of my study and a frank acknowledgement of my doubts and difficulties. Others may thus be incited to follow up the investigation, and looking at it from a different point of view, or bringing to it greater and more varied knowledge, may correct my errors and make up for my deficiencies.

The inscription of Mr. Roberts was described as being upon two copper plates, and Mr. Norris dealt with them as distinct plates, but their general appearance made me suspect them to be two portions of one plate broken very nearly in the centre. A careful examination confirmed this surmise. The two corresponding ends were much corroded and abraded, but upon joining them together a small portion of each accurately fitted into the other, and in one place the juncture completed a letter, part of which was graven upon one and the remainder upon the other portion of the plate. This was decisive, and afforded a clear direction as to the order of reading the inscription.

The plate is fourteen inches long and three broad. The letters which are composed of small dots punched upon the plate, vary somewhat in size, but are very carefully and distinctly formed; their average length may be said to be half an inch. The short line at the bottom of the plate is in somewhat smaller characters, as also is that stamped on the back of the plate as an endorsement or label. With these preliminary remarks, I proceed to give, in Roman characters, my reading of the inscription:—

Line 1. Samvatsaraye aṭṭa-satatimae XX7333 Maharayasa mahantasa mogasa *pa*shemasa masasa divase panchame IX Etaye purvaye chhaharasa

2. chukhsasa cha chhatrapasi Liako Kusuluko nama tisa patropa*ti* Takhaśilaye nagare utarena prachu deśo Chhema nama atri

3. śepatiko apratiṭṭavita Bhagavat Śakamunisa śariram patiṭhavati sangharamam cha sarva-buddhana puyae mata pitaram puyayan*to*
4. chhatrapasisa putra darasa ayu bala vardhia bhratara sarva *cha* satiga ... a ... dhavasa cha puyayanto mahadana patipatika si*dh*a uva*j*ae

Short line at bottom. Rohini mitrenaya imahi sangharame nava kamika

On the back. Patipasa Chhatrapa Liako.

The opening sentence is *Samvatsaraye aṭṭa-satatimae*, Sans. *Samvatsare ashṭa-saptatime*, "In the 78th year." The first word has two points of interest; it supplies a new compound in the form *ts*, and a variety of the locative case, *ye* being used instead of the common *e*. The words expressing the number are of the chief importance; it is therefore satisfactory to find that the letters on the plate are distinctly legible, and that, with one exception, their powers have long been conclusively decided. The exception is the second character rendered as *ṭṭ* (or *ṭṭh*) but of which the value has hitherto been unknown. A little consideration will, however, demonstrate that its power must be that now assigned to it. There cannot be any doubt as to the second word of the number being *satati*, "seventy;" the preceding word must, therefore, be the unit, and that unit unquestionably begins with the vowel *a*. *Ashṭa* (Pali, *aṭṭa*) is the only unit which has *a* for its initial, and consequently, that number must be here intended. A further proof of the value of this character is found in line 3, where we have it in the word *apratiṭṭavita*, the Pali equivalent of *âpratishṭhâpita*. After this there cannot be any doubt of the character being the equivalent of the Sanskrit *shṭ* and *shṭh*. The reason for reading it as *ṭṭ*, and not as *shṭ*, is twofold; the number seventy being in the Pali form *satati*, it is only reasonable to expect that the unit must be the Pali *aṭṭa*, not the Sanskrit *ashṭa*, and in the second place we have another character for the compound *shṭ* very clearly written on the Wardak Urn. These words are succeeded by six numerals, representing the number 78. The system of notation will form an independent portion of this paper, and need not be further noticed here. Then follow the words *Maharayasa mahantasa pashemasa masasa divase panchame* 5. The three concluding words admit of no doubt whatever, but signify the "5th day of the month." The other four words are all in the genitive agreeing with *masasa*, and apparently in connection with it. The last of them, or perhaps the

last two, must be the name of the month, but I have been unable to identify it quite satisfactorily. The name unfortunately occurs just at the fracture of the plate, and the first two letters are very indistinct; the first of them may be *p*, *k*, or *bh*, and the second seems to be *she*, but as it is difficult to decide what these letters really are, we may perhaps assume the name to be *Panemasa*, i. e., *Panæmus*, one of the Seleucidan months; for we shall find these months employed in other inscriptions. The initial letter seems to be preferably *p*, and it is easy to perceive how the letter *ne* might come to look like *she*, where the plate is so eaten away and corroded. Assuming then the name to be *Panemasa*, we have the words *Maharayasa mahantasa mogasa*, to dispose of. The first word is the same as *Mahárájasa*, the substitution of *y* for *j*, being common in Prakrit, and of which we shall meet with other examples, as *puyae* for *pujae*. *Mahantasa* is the adjective "great," for the Pali retains throughout the conjunct *n*, which occurs only in some of the cases in Sanskrit. In modern times the word is used for the head of a religious establishment. I have not been able to find a plausible equivalent for *moga*, and hence am led to conclude that it is a name. Having thus examined the meaning of each word, their syntactical relation requires attention, and is not without its difficulty. The words are all in the genitive case, agreeing with the word *masasa*, but whether they are to be taken as epithets of the month, or whether they are to be construed in connection with the previous sentence, "In the year," is a matter of some importance. In Fig. 2, of Plate x, we have the words *Chetrasa maha dharistisa* 8, the words *maha dharistisa*, whatever they may mean, clearly being used as an epithet of the month, like the *Rajabu'l-murajjab* of the Muhammadans. There is, therefore, good ground for believing that descriptive epithets were occasionally applied to the months. But when we come to examine those before us, it is difficult to see how *maharajasa* and *mogasa* can thus be applied. The former might possibly have the forced signification of "very royal," but no intelligible meaning is discoverable for *mogasa*; I propose, therefore, but not without much hesitation, to read the opening sentence, "On the 5th day of the month Panæmus, of the 78th year of the mighty king, the great Moga." Who or what this *Moga* is it is difficult to conjecture. There is the *Magas* of the Kapur di Giri Inscription, and the name of *Maudgala* or *Mogala*, the great disciple of Gotama, is derived from the word *Mudga*, the Pali of which is *Muga* or *Moga*. *Mahanta* might fairly be applied to this great priest, but the applicability of *Maharaja* is not so apparent. The epoch from which

the year is numbered, must also remain in doubt—the number of the year is too high to be that of the reign of any king, so that if it really be "the year of" of any particular person, it must date from his birth or accession, or his death, like the era of Buddha. We shall have, however, to recur to this subject in reviewing other dates.

The words coming next after the date are *etaye purvaye*, locative cases apparently like *samvatsaraye* at the beginning. The following word is *chhaharasa*, but the final *s* is doubtful, and the vowel attached still more obscure. Taking the word in connection with the next, *Chukhsasa*, which is a genitive, and followed by the conjunction *cha*, we may fairly assume this to be in the same case. The opening sentence then will read, *Etaye purvaye chhaharasa chukhsasa cha*. Unfortunately the two words *chhahara* and *chukhsa* are unintelligible; the latter has a very foreign look, but the former may spring from the root *kshi* "to dwell," "to reign." *Etaye*, is the demonstrative pronoun, and means, "in this;" and the word *púrva*, as a noun, signifies "the east," and in Pali has the meaning of "the presence" (Clough 124). The latter seems to be the most suitable meaning here. We may, therefore, read the sentence, "In this presence of Chhahara and Chukhsa." The following words are, *Chhatrapasi Liako Kusuluko nama*, "The satrap by name Liako Kusuluko." I read the final of *chhatrapa* as *si*, for the point of the *s* is evidently curled intentionally, and is so made when the word occurs again in the third line. The whole word appears to be a mere variant, not an inflection, of the word *chhatrapa*, as we have the genitive termination added thus, *chhatrapasi-sa* in line 3. The next word is *tisa* "his," and is followed by the letters *patropati*, which extend as far as the fracture, and leave the word incomplete, as there is room for two more letters. If this be the right reading, it is probably connected with the word *pátra*, though the application of this word is not obvious. In my first reading of the plate, I took it to be *patipati*, but Mr. Thomas, after cleaning the copper, considers the engraving as correct, and so we must leave the word in doubt. The next words are *Takhaśilaye nagare utarena prachu deśo chhema nama*—rather an awkward sentence, but apparently signifying "The country called Chhema, north-east of the city of Taxila." *Prachu* is the Sanskrit *prách*, *prág*, "east," and the phrase *utarena prachu* is equivalent to the ordinary *prág-uttarena*. *Chhema* for *Kshema* represents a well known word, but it has not been found as the name of a locality agreeing with that specified in our text. The following word is *atri* or *atra*, "here." The third line begins with

the word *śepatiko*, the name of the building or establishment set up by the Satrap. No Sanskrit equivalent for this word is apparent. The word *sepa*, with the signification of "comfort," is given by Hardy in his Eastern Monachism, and possibly is connected with the word *śepatiko*. We shall probably be not very far wrong in assuming this word to designate a temple, vihar, or some sort of building for religious purposes. The following word is a participle, *apratiṭṭavita* for *apratishṭhápita* "established," founded"—the substitution of *ṭṭ* for *shṭh* has already been referred to, and that of *v* for *p* is common in Prakrit; thus *paḍivaddi* is the Prakrit of *pratipatti*, and in a future page we shall find *ṭhuvo* for *ṭhupo*. After this come the words *Bhagavat Śakamunisa śariram*, "a relic of the Holy *Śakamuni*," and the verb *patiṭhavati*, the medial letter of which is somewhat obscure, but the whole word is sufficiently clear, and signifies "establishes," "places." The sentence then may be translated, "The Satrap, by name Liako Kusuluko, deposits a relic of the Holy *Śákyamuni* in the *śepatiko* established in the country called *Chhema*, north-east of the city of Taxila." The language is not very grammatical, and the dependence of the different words is not very clear. The word *atra* seems to be used instead of putting the name of the country in the loc. case, that case having already been used for the name of Taxila.

The next sentence is *Sangharamam cha sarva buddhana puyae*, "in honour of the Sangharama, and of all the Buddhas." Burnouf discusses the meaning of *Sangharama* (Lotus 436), and comes to the conclusion that it signifies "the garden of the assembly," and by extension the "lieu d'habitation des Religieux." This signification is certainly borne out by the etymology, and would seem to apply to the word in a passage lower down, but it hardly suits our text, where the word is coupled with "all the Buddhas." May not the term be used to designate the Buddhist religion, or the priesthood collectively? The next sentence is *Mata-pitaram puyayanto*, "for the honouring of his father and mother." The last letter of *puyayanto* is indistinct, but there can be no hesitation about it as the word occurs again in the next line. It is the dative case of the active present participle. The following sentence, beginning line 4, is *Chhatrapasisa putra darasa ayu-bala vardhia*, "For the long life, strength, and prosperity of the son and wife of the Satrap." The Sanskrit word *dárá*, wife, is a masculine, and is always used in the plural; but the Pali, while retaining the gender, employs the word in the singular, as in the text (Clough 29). *Vardhia* is from the Sanskrit *vriddhi*. The next sentence is defective—*Bhratara sarva*

cha sati . ga . . . dhavasa cha puyayanto. The defective word after the *cha* is doubtless some form of *sat*, "good," "virtuous," and . . *dhavasa* may probably be completed as *bandhavasa*, gen. of *bandhava*, "a relative." Omitting the defective word, the sentence may be translated, "For the honouring of all his brethren and . . . relatives." The last sentence appears to be *Maha dana patipattika siḍha uvajae*, "For the knowledge (making known) of his great liberality, fame, and success." The final word seems to be *uvaja*, the Sanscrit *upajná*—*maha dana patipatti* is clear; but whether the *ka* should go with *patipatti*, or with the following word *siḍha* or *sija*, is doubtful. I have taken this word to stand for *siddha* or *siddhi*.

The small line at the foot reads *Rohini Gatrenaya imahi sangharame nava kamika.* The two first words form a name, and must be read as transcribed; for if *Gatrena* be taken as an instrumental, the *ya* will be superfluous. *Imahi* is the loc. "in this," agreeing with *sangharame*, "religious abode." The next word is obscure, and may be *nava*, *nara*, or *nata;* as *nava* it will mean "new," as *nara* "man." The last word is *Kamika*, Sanskrit *Karmika* or *Kármika*, "maker." *Kármika* is also the name of a Buddhist sect (Burnouf, Int., 441), but the word would here appear to be used in its simple sense. The whole seems to be the builder's endorsement or certificate, "Rohini Gatrenaya, the *new* (?) builder in this religious abode."

The endorsement on the back is a sort of label comprising the Satrap's name—*Patipasa Chhatrapa Liako.* If *Patipasa* be taken as a gen., the reading will be "Liako, Satrap of the Lord of Lords;" but if the word be a nom., as we have seen *Chhatrapasi* to be, it will then read, "The Lord of Lords, the Satrap Liako."

Translation.

In the year seventy-eight (78) of the great king, the great Moga, on the fifth (5) day of the month Panæmus. In this presence of the Chhahara (?) and Chukhsa (?), the Satrap, by name Liako Kusuluko deposits a relic of the Holy Śákyamuni, in the *śepatiko* established in the country called Chhema, north east of the city of Taxila, in honour of the great collective body of worshippers and of all the Buddhas; for the honouring of his father and mother; for the long life, strength, and prosperity of his son and wife; for the honouring of all his brothers and relatives; and for making known his great liberality, fame, and success.

Rohini Gatrenaya, the (new?) builder in this religious abode.

Liako, Satrap of the Lord of Lords.

Liako Kusuluko, the Satrap of this inscription, is a new name; but his dynastic name of Kusuluko is, without much doubt, the same as the Greek Kozola, and the Bactrian Kujula or Kuyula which has been found upon many coins (see Thomas' Prinsep II, 202, 3). Mr. Thomas has kindly favoured me with copies of the usual legends of these coins, and has noted several variants observable in them. They will come under review in a subsequent portion of this paper. Little is known of these Kozolas or of the date of their power. Their coins have been found in considerable numbers in the Punjab, and the present inscription is an indication of their authority over Taxila. They would seem to have belonged to a Scythic race; and the various ways in which their name is rendered in Bactrian characters is strong evidence of its being a foreign one.

The Bactrian word for Satrap, which has hitherto been rendered "*Chatrapa*," I have converted into *Chhatrapa*. The initial letter is a clear modification of the *chh* of Kapur di Giri, and the transition stages are seen in Mr. Bayley's seal (plate iv, fig. 6), and in the Wardak Urn (pl. x). It is always found as the representative of the Sanskrit *ksh*, of which compound, *chh* and not *ch*, is the modern representative. Thus we find *Rachhita* for *rakshita*, and *dachhina* for *dakshiña;* and the word *chhatrapa* itself is spelt *Kshatrapa* on the coins of the Sah Kings, and *Khatrapa* on the coins of the "Buddhist satraps," the signification being "ruler or patron of the Kshatras." (Prinsep ii, 85, 87, 223.)

Numeral System.

Before entering upon a consideration of any other inscriptions I propose to investigate the numeral system as exemplified and explained in this inscription, and to bring together all the dates within reach. These Bactrian figures have, for a long time, excited the curiosity of the learned, and Colonel Cunningham has put forward a system of interpretation so authoritatively that I feel bound to notice it at length, and accordingly allow him to speak for himself in a note.[1] He gives the figures a decimal value; but a mere

[1] Colonel Cunningham's readings of these dates were, I believe, first made known in the year 1854 (Beng. Journal, xxiii, p. 703), in which he states his interpretation to rest "upon the authority of a stone slab in my own possession, which gives in regular order the nine numerals of as early a period as the Sah

glance at the array of six figures in the Taxila plate is sufficient to prove that the numerals must have an arbitrary and not a decimal power; that the Bactrian system must in fact be of the same nature as the Roman. I had long been possessed with this idea, arising, in the first instance, from the fortuitous resemblance of the figures in the Manikyala inscription to the Roman C and X, and I was confirmed in it by the occurrence of three figures in the date of the month on the Wardak Vase.

Upon reading the words *aṭṭa satatimae*, "seventy-eight," in the Bactrian plate, and the word *panchame*, "five," I immediately sent my readings, with the figures, to Mr. Norris, and by return of post he

coins of the Satraps of Saurashtra;" and he then continues to state in a note that he discovered in the year 1852, "that these numeral figures, from 5 to 9, were the initial letters of their *Pashtu* names *written in Ariano Pali*. Thus 5 is represented by *p* for *pinz;* 6 by *sp* for *spaj;* 7 by *a* for *avo;* 8 by *th* for *atha*, the *a* having been already used for 7; and 9 by *n* for *nah*. Even the 4 is a *ch;* but as the Pashtu word is *salor*, this form must have been derived from India. The first four figures are given in two distinct forms, the second set being the older; and the two forms show, in the clearest manner, how the straight horizontal strokes of Asoka's, and even of later days, gradually became the 1, 2, 3 of India, from which they were transmitted through the Arabs to Europe." The objections to this theory have already been very forcibly urged by Mr. Thomas (Jour. As. Soc. Beng. xxiv, p. 556; Prinsep. Vol. I, 144, 145), and I should not have noticed it so fully here but for the reference to the inscribed stone upon which the theory is stated to have been founded. It is very much to be regretted that no copy of this stone has ever been made public for the satisfaction of the learned in these matters, as it is quite clear that Colonel Cunningham's interpretation and method of application are uncertain or erroneous, indeed he himself seems to have mistrusted his own renderings, as in his first paper above quoted he read from left to right, but in his last (Beng. J. 1862, page 303) he reverses the method. The dates of which he gave solutions in the first paper, are —

1. Manikyala (pl. ix), XX7 = 446.
2. Ohind (pl. x, fig. 2), month XX = 44.
3. „ „ year | 733 | 331.
4. Panjtar (see pl. x, fig 3), year 390.

Upon comparing the first and second of these, it is clear that they were read from left to right; the reading of the last date is unintelligible. In the last paper the reading is from "right to left," and the numbers 733 (Wardak, pl. x), and XX7 (Pl. ix, fig. 3), are rendered as 331 and 144, from which also it appears that the figure 7 had in the interim changed its value from 6 to 1. The true value has been given to the figure X, 4, from the first; but the reading of XX as 44 in the date of a month was a manifest error, as has been well urged by ajendra Lal (Beng. J. vol. xxx, 342). Whether the correct rendering of the figure X was more than accidental it is impossible to say without a reference to the authority of the "stone slab," a publication of which document is urgently required for the furtherance of antiquarian knowledge.

favoured me with his interpretation of the numerals, which entirely agreed with that I had myself determined in the interim, and satisfied me that we had concurrently arrived at the true solution. It was clear from the date of the month that IX represented 5, *i.e.*, 4 and 1; consequently the two X's at the left of the number of the year expressed the number 8. It was thus manifest that the figures must be read from right to left. Taking the form 7 to represent 10, and the duplication of that form in the figure 3 to be 20, the required number 78 was obtained—thus XX7333.

$$78 = .4+4+10+20+20+20$$

The result of this is that we get examples of the figures 1, 4, 5, 8, 10, and 20, and are enabled, as I shall presently show, to express all numbers under 100.

The date then of the Taxila Plate is 5th Panæmus, of the year 78.

The inscription on the Hidda Jar, which will be found in the plate at page 262 of the Ariana Antiqua, appears to be the earliest date known; the year being XX = 8. Colonel Cunningham, in his last paper on these dates, reads it as consisting of three figures XX7, but this is a mistake, as there are only two figures. In this interesting paper, Colonel Cunningham first makes known the fact of the Seleucidan months being in use. I had previously made the same discovery by reading the name of the month in the Wardak inscription as Artemisius. Gladly conceding to Colonel Cunningham the merit of first publication, it is desirable to mention the fact of my having independently arrived at the same conclusion, and being entirely of accord in identifying a Seleucidan month. The very unsatisfactory nature of the published copy of the Hidda inscription, and the absence of any means of verifying it, had induced me to pass it over, but I now fully concur with Colonel Cunningham in reading the month as Apilaesa, or rather Apiraesa, *i.e.*, Appellæus. The succeeding words he reads as *vrehi dasami*. We may admit that the last word is that which is really intended, but it reads *dasahi* rather than *dasami;* it may, however, be allowed to pass for "10th." The word which Colonel Cunningham reads "*vrehi*" requires attention, as it occurs in several other inscriptions. Rajendra Lal, in his paper on the Wardak inscription, agrees in reading the word as *vrehi*, and thinks it to be an abbreviation of Vrihaspati, or Thursday. Colonel Cunningham, however, considers it the representative of the Sanskrit *vriddhi*, and to mean the increase of the moon—the bright half of the

month. I am obliged, however, to dissent from these opinions, and I concur with Mr. Thomas's tentative reading *stehi*. The initial letter is clearly the well-known "*st*" of Thomas's alphabet: it is found in the names of Strato (Ari. Antiq., plate vi, fig. 10) and Hippostratus, and in the word which Colonel Cunningham reads as "Strategasa," the Greek Στρατηγός, on the coins of Aspavarma (Beng. J., 1857, p. 696). In the face of all these it is impossible to read the word as *vrehi*, however desirable it might be. We must here anticipate a little, and compare the various dates in which the form appears. The following are examples of its use:—

Hidda—*Apiraesa stehi dasahi* = 10.

Wardak—*Arṭamisiyasa stehi* IX7 = 15.

In fig. 3, pl. ix, it occurs after an illegible month as *stehi* 7 = 10. It may possibly be found in the Manikyala inscription between the name of the month and the word *divasa*, "day;" but this is far too doubtful for the purposes of argument. Colonel Cunningham, in his last paper, supplies another date, *Tsattikasa divasa vrehi* (*stehi*), 3, which he renders "third day of the increase of Xanthikos." It is very desirable to ascertain if the word *divasa* really occurs as placed in the last date, or whether it is only inserted as complementary, as is the case with Colonel Cunningham's reading of the Wardak inscription, in which he gives the word *divasa*, though it is not in the original. The solutions of the word proposed by Babu Rajendra Lal and Colonel Cunningham, even supposing it to be *vrehi*, as they read it, are by no means satisfactory. The supposition of its being an abbreviation of Vrihaspati, Thursday, is quite inadmissible, for the letters "*vrehi*" are not "the initials" of Vrihaspati; and even if they were it is next to impossible that they could be used in that sense in so many different records. The proposal to look upon the word as signifying the increasing half of the moon is more specious, but equally untenable. I cannot find that the Sanskrit *vṛiddhi* is ever used to express "the increase of the moon;" but even supposing it to have been employed in that signification *vrehi* is not the Prakrit or Pali form of the word. The word *vrehi* is used as we have seen with the Seleucidan months, perhaps exclusively with them; and although there are reasons for believing those months to have been luni-solar, there are none, that I am aware of, for supposing the purely Hindu division of the bright and dark half to have been observed in them. Finally, if Colonel Cunningham's reading of his last date *Tsattikasa divasa vrehi* (*stehi*) is accurate, it settles the question, for there the term follows the word "day," which it could not do if

it had the meaning he proposes: it would necessarily come after the name of the month if it related to the month. Though satisfied of the inaccuracy of the interpretations proposed, it must be confessed that no convincing solution of the word is apparent. It seems to be a word in the locative case; and in plate x, fig. 2, we have a form "*stisa*," which may possibly be the genitive. It seems to be equivalent to "date;" the "*Arṭamisiyasa stehi*, 15," of the Wardak Vase, corresponding with the "*divase panchame*, 5" of the Taxila inscription. Further discoveries may enable us to settle the meaning of the word more distinctly, but we cannot err very much in attaching to it the meaning here proposed.

The Manikyala inscription (plate ix) is dated XX7, *i.e.*, 18; and the month is apparently given in the last line of the short passage on the right-hand side of the inscription. Colonel Cunningham has read it as "*Kattikasa māsa divasa*, 3;" and I agree in the main with this reading of the letters; but there is such obscurity in this part of the record that copies and tracings made at different times vary considerably. The first two letters and the last two are distinct, the others are all very hazy, and cannot be traced with any degree of certainty. The first two letters make *karti* (for the compound is *rt*, not *tt*), the next letter does not resemble the required *k*, but its true form is somewhat doubtful. The next is *s*, and is tolerably clear. The succeeding letters are extremely indistinct; and one tracing of my own is somewhat suggestive of the word *stehi*. The *d* of *divasa* is not clear, but the other two letters are distinct. The figure which Colonel Cunningham reads as 3 is badly formed; but there can be no hesitation in identifying it with the 20 of the Taxila plate. We may, therefore, read the date of the Manikyala inscription as "20th Kartika, year 18."

The short and indistinct legend figured in plate ix, fig. 3 is dated in the same year as the Manikyala inscription; that is XX7 = 18. Colonel Cunningham reads the month "doubtfully" as Artemisius (Beng. Journ., 1862, p. 303), but I cannot go with him in this reading. The number of the year is followed by two unknown letters, and the rest are indistinct, but appear to finish with "*stehi* 10." The date would then appear to be "10th of ———, year 18."

The date next in succession is that of the Wardak Urn, which is *Sam* 1733 *Masya Arṭamisiyasastehi* IX7 "15th of the month Artemisius, in the year 51."

Colonel Cunningham's two Yusafzai inscriptions from Ohind and Panjtar (plate x, figures 2 and 3) have the peculiarity of being

preceded and followed by a straight stroke, enclosing the three central figures as it were in brackets; and it is just possible that this may be their use here; but as the single stroke is the representative in other places of the numeral 1 we are not justified in assuming that they have no numerical value in the dates before us. If they are really part of the date the right-hand stroke may be the representative of 100; but this is a mere speculation. The Ohind inscription reads "*San* 𐨑𐨒𐨒𐨑 *Chetrasa maha-dhatistisa vaomiti* XX." I have adhered strictly to the published copy, but I am curious to know if the original might not justify the reading of *aṭṭamiti* instead of the unintelligible word *vaomiti*. The first letter as it now stands may be read indifferently as *a* or *v*, and the second merely requires a straight instead of a curved top to make it *ṭṭ*—the word would then be *aṭṭamiti*, "eight," and would agree with the numerals XX = 8. The emendations required to arrive at this intelligible reading are so slight that they may very fairly be suggested, but I will not assume them however probable they may appear. The date then of this inscription is "8th Chaitra, of the year 61." The value of the right-hand stroke remains to be settled; but, as before stated, it may possibly stand for 100, and if so the year will be 161. I have, in a previous page, noticed the words "*maha-dhatistisa*," and the ground for considering them to form a descriptive epithet of the month. The meaning of *maha* is obvious; *dhatistisa* may possibly be the Sanskrit adjective *dhátri*, "cherishing, nourishing, fostering"—an epithet not unsuitable to the vernal month of Chaitra. As to the termination *stisa*, may not this be the genitive form of the word *stehi*, already commented upon.

The other Yusafzai inscription from Panjtar (pl. x, fig. 3) presents an unknown numeral if the form is correctly delineated. It is not possible to do more than guess at its value; but supposing it to be a real figure, it may dispute the representation of the number 100 with the right-hand 𐨑. The following figure is 20, and the two succeeding strokes may be considered as representing 2. Colonel Cunningham reads this date as *San* 390 *Śrávanasa mása sudi prathame*. Passing over the number of the year, which is irreconcileable with our present system of numbers, the remainder of the reading is satisfactory. I am not sure, however, that we should read *mása sudi* rather than *másasahi*, for the very slight twist at the bottom of the *s* is not to be compared with the well-developed conjunct *u* which occurs subsequently; and the next letter is more like the usual *h* than *d*. *Sudi* is certainly more intelligible, and so far preferable. The word *praṭhame* is clear and certain,

and the stroke following it may be taken as its numerical representative.

Review of the Numerals.

Having thus gone through all the known dates, we may now proceed to sum up our acquisitions, to examine the arguments for and against the values assigned to the figures, and to see how far the Bactrian system is capable of development from the materials in hand.

1. The stroke representing the figure 1 has been hitherto passed over, with the belief, apparently, of its being a mere stop or mark of separation dividing the numerals from the letters; and at first sight there is nothing improbable in such a supposition. The Wardak inscription employs this stroke after two figures in the date of the month, so that it could have no power if the figures had a local value like the Arabian numerals; and the copies of the Ohind and Panjtar inscriptions (pl. x, figs. 2 and 3) place it both before and after the undoubted figures, enclosing them as it were in brackets; thus affording a *primâ facie* case for deeming it of no numerical value. On the other hand, it must be observed that it is entirely absent from the Manikyala inscription, and in the Taxila inscription it is absent from the number of the year, while it is used in the date of the month. Independent, therefore, of any knowledge of its value it would seem to have been used with a purpose and a power. Now, as to its being the representative of the unit *one*, the general use of this symbol for that purpose need only be referred to as strongly favouring the supposition. The four straight strokes in the Kapur di Giri inscription, representing numerically the *chaturo rajano*, prove it to be there used as the figure 1; following the word *praṭhame* in the date of the Panjtar inscription it must be looked upon as the figure representing that number; and, finally, the way in which it is used in the Taxila inscription is decisive of its value; unless, indeed, the interpretation of the numbers in that document is altogether erroneous.

2. 3. The equivalents for these numerals are not given in the Taxila inscription, and the only inference we can draw respecting them is from the Kapur di Giri inscription, where four distinct strokes are used as the representative of the numeral 4.

4. The four lines of the Kapur di Giri inscription are represented by X in the Taxila inscription; the four points of the cross being severally counted as one, like as a star with 5 points, was used by the Egyptians as the representative of 5 (Revue. Arch. Oct, 1862).

The change thus effected between the date of the Kapur di Giri and Taxila inscriptions is a very reasonable one, and the character so formed is a fair and intelligible symbol for the number 4. This figure, like the Roman V, is an important one, being used with additions for expressing other numbers. As we have facts to deal with, it is unnecessary to theorise as to the employment of the number 4 as a master number; there are arithmetical reasons in its favour, and the Indians have certainly shown a partiality for this number and its multiples, in their weights, measures, and coinage.

5. This number is very clearly expressed in the Taxila inscription by IX, *i.e.*, 4×1.

6. 7. We have no example as yet of these numbers, but we may conjecture that they are represented by the X for 4 with additional straight strokes, upon the same principle as in the numbers 5 and 8.

8 Is represented by XX, that is by two figures of 4.

9. Of this numeral we have no example; it might, however, be clearly represented by IXX.

10. 20. Ten is represented by the sign 𑁒, and twenty by 𑁓, that is by a double ten, in the same way as 8 is noted by a double 4.

The highest numeral that we are acquainted with is 78, the date of the Taxila inscription, in which the 70 is expressed by three 20's and a ten. It may reasonably be inferred that the same principle continued up to 100. Thus, although we have examples of only six figures, including the 10 and 20, we may, by carrying out the principle, express the unknown numbers intelligibly and in all likelihood accurately, thus :—

	Certain.	Conjectural.		Certain.	Conjectural.
1	I		10	𑁒	
2		II	20	𑁓	
3		III	30		𑁒𑁒𑁓
4	X		40		𑁓𑁓
5	IIII or IX		50		𑁒𑁓𑁓
6		IIX	60		𑁓𑁓𑁓
7		IIIX	70	𑁒𑁓𑁓𑁓	
8	XX		80		𑁓𑁓𑁓𑁓
9		IXX	90		𑁒𑁓𑁓𑁓𑁓

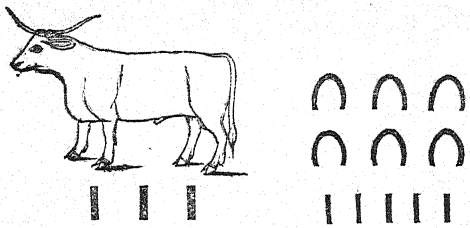
In the conjectural column there are many numbers about the accuracy of which there cannot be the remotest doubt; thus, seeing how the numbers 5 and 8 are formed, there can be very little doubt

about 9; and having the number 70 there is small room for hesitation about the way of representing the numbers between 20 and 70. No number, however, has been inserted under the head of "certain" without express authority in words for the value assigned to it. As to the numbers from 100 upwards we are at present in the dark, and have not the same means of constructing them as we have of lower numbers. Whether a simple stroke upon the right of the figures is the representative of 100, or whether the unknown figure in pl. x, fig. 3, be the symbol of that or any higher number must, for the present, be a mere subject for speculation, and remain open for the decision of future discoveries. The newly discovered inscriptions of Muttra with Indian Pali letters and Bactrian Pali figures may, when published, afford means for verifying and extending our knowledge of these numerals.

The Bactrian system thus developed may appear, at first sight, clumsy and complicated; but keeping the Roman system in remembrance, it is impossible to pronounce it improbable or unpractical. Comparing the Bactrian, so far as we know it, with the Roman, there is little reason to prefer one over the other, on the ground of clearness or simplicity.

It is beside my present purpose to seek analogies to these numerals, or to make any general comparison of them with other ancient systems of notation; nor have I the means at my command for doing so. Mr. Thomas, who has taken great interest in my discovery, has very kindly brought to my notice an "Exposé des Signes de Numeration usités chez les Peuples Orientaux;" par A. P. Pihan, Paris, 1860, in which the following very curious account is given of the Phœnician system:—"Un trait horizontal (—), quelquefois recourbé à droite (⌐) indiquait le nombre 10 La première dizaine s'exprimait aussi par l'un des signes suivants ⌐ ⌐ ⌐, ou — ○, ou bien ⌐ ○. Le nombre 20 pouvait s'écrire —— —— ou ═══ ou bien encore ⌐ ○ ○ ⌐ (ce qui représente deux fois ∩). Cependant il existait un signe commun pour les vingtaines. On le figurait habituellement ainsi N." The higher numbers up to 80 were made by repeating the sign for 20, thus N N = 40, N N N N = 80. This system, so far as respects the numbers 10 and 20, and the repetition of the latter for the expression of higher numbers is identical in principle with our numerals, and seems conclusive as to the accuracy of the values assigned to the Bactrian figures before this Phœnician system came under my notice. The similarity of the two cannot well be accidental. The Bactrian figures, therefore, like the characters

of the alphabet, must have been drawn from a Semitic source. It is interesting also to compare the Egyptian figures 𓆐 for 100 and ∩ for 10 which continued in use to the second or third century after Christ; and the following illustration of the Egyptian system which appeared in the Revue de l'Archéologigue for October, 1862, is very apposite in its analogy to the Bactrian.



bœufs 65.

Epoch of the Dates.

The materials at our command do not enable us to fix the epoch from which the dates start, nor are we by any means certain that they are all concordant and of the same era. The use of the Seleucidan months gives fair ground for believing the Seleucidan era also to have been in use; but the documents before us cannot be so old as their dates would make them according to that era. The Samvat of Vikramaditya comes perhaps nearest in point of time, but we cannot assume that era to have been in use in Bactrian inscriptions without good evidence, and none is at present forthcoming. The epoch may be the rise of the dynasty, or the accession or the death of some king or great personage. The number is too high in one instance (Taxila plate) to admit of its being the year of the reign, which is encouraging, and leaves ground for hope that future discoveries may enable us to determine the epoch, and thus settle a very important point in Indo-Bactrian chronology.

Coins of the Kozola Kadphises Group.

The coins of the Kozola Kadphises group give us three names, Kadphises, Kozola Kadaphes, and another Kadphises. The Bactrian Pali legends present a few variants, which Mr. Thomas has pointed out, and which will be noticed in due order.

The coins of Kadphises are thus described by Mr. Thomas in Prinsep's Essays, vol. ii, p. 202:—

"Copper—Plate xxviii, fig. 12.

"Obverse—Head as in the Su-Hermæus' coins.

"Legend—KOPΣHAO [Variety KOPONAO] KOZOYAO KAΔ-ΦIZOY.

"Reverse—Hercules as above.

"Arian Legend—*Dhama Phidasa Kujula Kasasa Kushanayatugasa.*

"Monograms—Arian *dh* with *r*. Ariana Antiqua, pl. xi, figs. 10, 11."

These coins have also been described by Colonel Cunningham (Beng. J., vol. xxiii, p. 709, and pl. xxxv). His reading of the Arian legend is *Kujula Kasasa Kushanga Yathagasa Dhama pidasa.* I propose to slightly amend these versions by reading the Bactrian legend (pl. iv, fig. 7 *a*) as follows: *Dhama ṭhidasa Kujala Kasasa Kushana Yarugasa,* "(coin) of the Yaruga of the Kushans Kujala Kasa, steadfast in the Dharma." In the variants of this legend we find *ṭharasa* for *ṭhirasa* and *Śujula* for *Kujula.*

The coins of Kozola Kadaphes are thus described (Prinsep, vol. ii, p. 203):—

"Copper small coin—Plate xviii, figs. 13, 14, 15, and pl. xxviii, figs. 13, 14.

"Obverse—Youthful head.

"Legend—KOZOAA KAΔAΦEΣ XOPANΣY ZAΘOY.

"Reverse—A Scythic figure.

"Arian Legend—*Khashanasa Yauasa Kuyula* [*Kuyanla?*] *Kaphsasa Sachha dhani phidasa.*

"Monogram, No. 124—Some specimens add the Bactrian letter inserted in the plate under No. 125. Ariana Antiqua, pl. xi, fig. 14."

Colonel Cunningham's reading and translation of the Bactrian legend is (Beng. J., vol. xxiii, p. 709), *Khushanga Yathaasa Kujula Kaphsasa Sachha-dharmapiḍasa,* "Coin of the king of the Khushang Kujula Kaphsa the Crown of the true *dharma.*" My reading differs in a few particulars, being, *Khashanasa Yaüasa Kuyula Kaphsasa Sacha-dharma ṭhirasa* "(coin), of the Yaüasa of the Khashan, Kuyula Kaphsa, steadfast in the true *dharma*" (plate iv, fig. 7, *b*).

The coins of the second Kadphises are thus described (Prinsep's Essays, ii, 213):—

"Gold—Unique.

"Obverse—King, seated after the Oriental fashion (cross-legged) on clouds. He holds a club in his hand, and small flames ascend from his shoulders; he wears a Scythic cap surmounted by a single-centred trident.

"Legend—BACIAEYC OOEMO KAΔΦICHC.

"Monogram—169.

Fig. 4. Manikyala Cylinder.

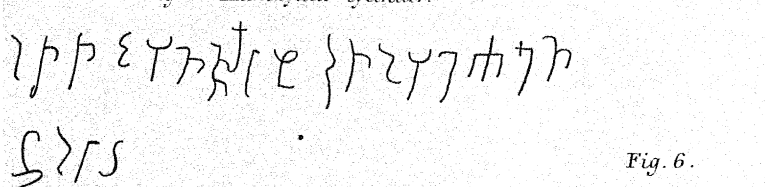


Fig. 5. Manikyala Silver disc



Fig. 6.

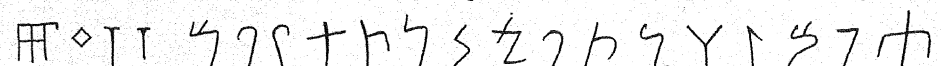


Fig. 7.

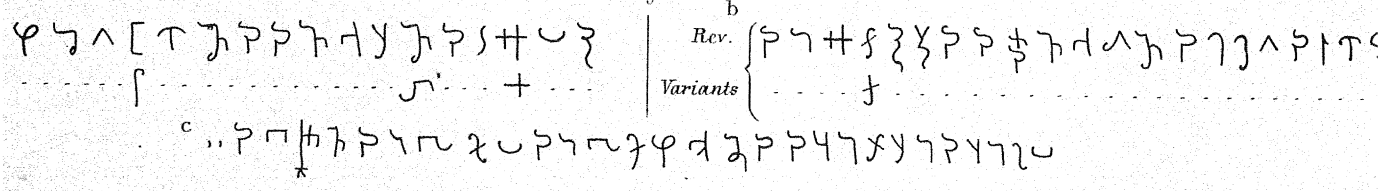
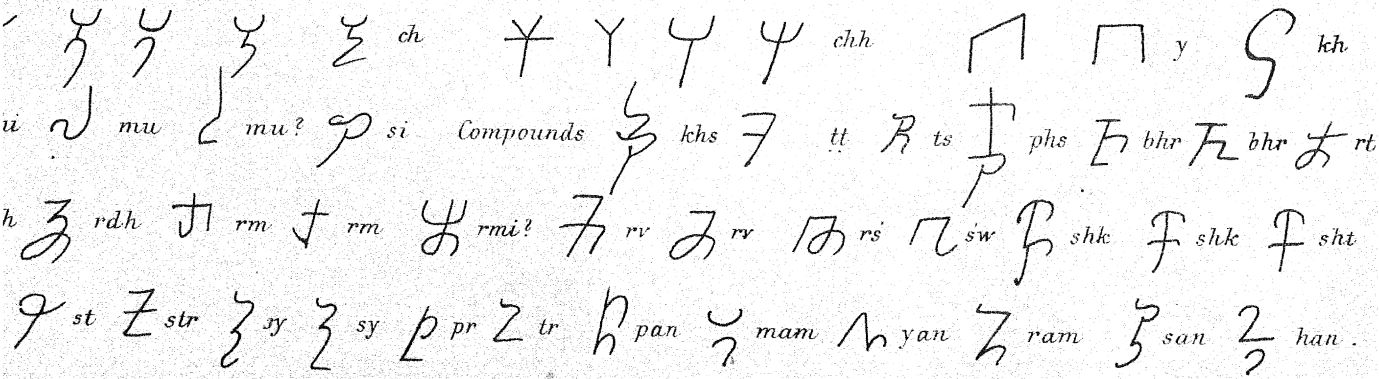
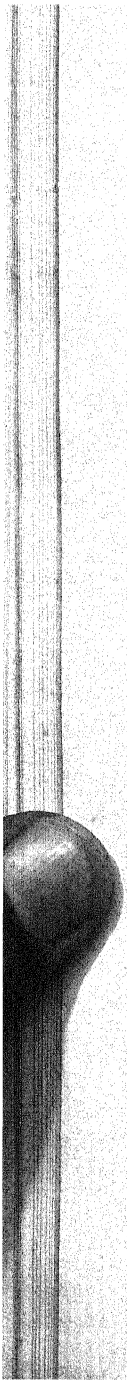


Fig. 8.





"Reverse—Siva and his bull (Nandi); flames rise from the divinity's head; he holds a trident in his right hand.

"Arian Legend—*Maharajasa Rajadirajasa sarvaloga Imastasa Mahimastasa Hapinasasa.*

"Monogram—159.

"Other gold and copper coins of this king have some varieties in the device, thus:—

"Obverse—King seated on an Eastern throne, with a flower in his right hand. Legend and monogram as above.

"Reverse—Device as above.

"Jour. des Sav., 1834, pl. fig. 7; Ariana Antiqua, pl. x, fig. 5, and pl. xxi, fig. 7.

The Bactrian legend (pl. iv, fig. 7 *c*) is remarkably clear and intelligible. There is no reason to call in question the first half of Mr. Thomas's reading, but the latter half may certainly be greatly improved. The reading I propose is *Maharajasa Rajadirajasa Sarva-loga-iśwarasa Mahiśwarasa Kapiśasa* "(Coin) of the Great King, King of Kings, ruler of the whole world, the mighty Lord Kapisa." The gold coin which Mr. Thomas describes as "Unique," reads *Hapinaśasa* for *Kapiśasa*. The star at the foot of the *pi* in the name is persistently repeated, but its power is not obvious. Professor Wilson read it *s*, making the name Kapsiśa; but the analogy of the *phs* in fig. 7 *b* forbids this rendering.

The substitution here proposed of *ṭhira* or *ṭhida* for the word hitherto read *pīḍa* or *phiḍa* is a manifest amendment. The old reading originated with the late Professor Wilson, who thought the character to be "in all probability *pi*," because "the same form very nearly commences the equivalent of Philoxenes" (Ariana Antiqua, 257). The same learned writer conjectured the title as being either *Dhama-pidasa* or *Dhama-piasa*, "the parent, or the friend of justice." Colonel Cunningham considered the word to be *pīḍa*, a chaplet or crown, and consequently read the compound *Dhama-pīḍa*, "Crown of the Dharma." He admitted this compound to be "unusual," but still he thought it "grammatically correct and eminently Buddhistical." Mr. Thomas appears to have adopted the last reading in default of a better, but has changed the word *piḍa* to *phida*. With respect to Colonel Cunningham's reading it must be observed, in the first place, that the Sanskrit word for "crown" is not *pīḍa*, as he writes it, but *pīḍā*, not masculine but feminine; next that the cerebral *ḍ* is not employed in the word on the coins, but the dental *d* or the letter *r*; and lastly the compound is, as he admits, an unusual one. On examining the character, it is evident

that the right hand perpendicular is the stem or base of the letter, and the line on the left is the vowel mark—to make the letter *pi*, the positions of these lines must be reversed, and a downward curve must be added to the horizontal line. The character is, perhaps, more like *phi*, but still the curve of the horizontal line, distinctive of the letter *ph*, is absent in the character before us. The only objections to the proposed rendering *ṭhi*, is the circumstance of the left end of the horizontal line being somewhat longer than in the simple *ṭh*; but this prolongation has probably been made to allow of the vowel *i* being graven distinctly across it. But the fact of the word being written *ṭharasa* upon some coins is, I think, conclusive as to the word being really *ṭhirasa*. The emendation *ṭhira* represents the Sanskrit *sthira*, firm steadfast, a word very commonly employed in compounds; and the epithet *dharma-ṭhira*, steadfast in the *dharma*, conveys a very appropriate and intelligible meaning, corresponding with the well-known name *Yuddhishṭhira*.

The alteration in Fig. 7 *a* of Colonel Cunningham's reading *Yathagasa*, and of Mr. Thomas's, *Yatugasa* to *Yarugasa*, is abundantly justified by the exact resemblance of the letter in question to the normal form, and to the frequently recurring *r* in Fig. 7c. This word *Yaruga* corresponds with the word in Fig. 7b, which I concur with Mr. Thomas in reading *Yaïasa*. No meaning has yet been assigned to this word or words, and I have no conjecture to offer as to the signification. The two words are probably only different ways of expressing some foreign title. The letter *r* is rarely elided, but the guttural is frequently omitted; thus we have *dhamiasa* for *dhamikasa* on the coins.

Fig. 7c is important, as affording in the word *sarva*, a character which there can be little hesitation in accepting for *rv*, and as supplying a key to similar combinations with other letters, as *rdh* of the word *samvardhaka* in the Manikyala inscription. The word which I have transcribed *iśwara*, I at first read *iśura*, a difference of spelling, not of meaning; but finding the vowel *u* to be invariably affixed to the left perpendicular line of the *ś* in the Kapur di Giri and Wardak inscriptions, and the same vowel to be similarly annexed, in the Taxila inscription, to the left line of the *y*, while the anuswara is annexed to the right, I conclude that the word on the coin must be read *iśwara*—if this is right we get a new compound *św*. It may further be observed that in the Kapur di Giri inscription, and in the word *Śravan* in Colonel Cunningham's Panjtar inscription, the letter *r* is appended to the right hand perpendicular of the *ś;* these facts together, establish the rule that

vowels are added to the left limb, and conjunct consonants to the right limb of the letters *y* and *ś*.

Peshawar Vase.

Plate iii, fig. 2. This is a legend copied from a Steatite Vase now in the Museum at Peshawar, but its history is unknown to me. The inscription is carefully and clearly executed, every letter is distinctly formed, and the whole is in a fine state of preservation. A copy of the inscription was sent to me some months ago by Mr. Thomas, and I had but little difficulty in mastering it. The reading is—

Gihilena Siha-rachhitena cha bhratarehi Takhaśilae ayam ṭhuvo pratiṭhavito sava Buddhana puyae. "This tope was erected in Taxila by the brothers Gihilena and Siha Rachhitena, in honour of all the Buddhas."

The word Taxila, I was at first disposed to read as *tat śilae* or *tan śilae*, but there can be no doubt that the reading now proposed is the right one, especially when the light of the Taxila inscription is thrown upon it. There is little in the wording of this inscription to call for special remark, as the whole is expressed in very grammatical language. The word *Takhaśilae*, derived from the Sanskrit *Takshaṣilá*, takes the proper form of the feminine locative. The inward bend of the right limb of the *y* in *ayam* has been read as anuswara, but it may be omitted without injury to the sense. *Ṭhuvo* may be *ṭuvo* with the unaspirated letter, and the substitution of *v* for *p* in this and the following word is a regular Prakrit change already noticed in the Taxila inscription. The form *sava* instead of *sarva* is a nearer approach to the Pali.

Bimaran Vase.

Fig. 3, pl. iii, is from a Steatite Vase, found by Masson in a tope at Deh Bímarán, near Jelalabad. Within the vase was inclosed a gold casket, described by Professor Wilson in the following terms:— "The casket is chased with a double series of four figures, representing Gautama in the act of preaching; a mendicant is on his right, a lay follower on his left, and behind the latter a female disciple: they stand under arched niches resting on pillars, and between the arches is a bird; a row of rubies is set round the upper and lower edge of the vessel, and the bottom is also chased with the leaves of the lotus. The vase had no cover" (Ariana Antiqua, 41). Engravings of the vase and casket are given in the same work. The longer inscription is scratched or graven round

the body of the vase; the shorter one round the upper part or shoulder, not on the cover, as stated in the description of the plate; for, as above observed, the vase had no cover. Burnouf picked out the word *Sarirehi*, but Colonel Cunningham was the first to make known the fact of the upper line being only an abbreviation of the longer one, and to read the opening words as *Bhagavána Sarirahi* "(Stupa), containing relics of Bhagwán or Buddha" (Jour. As. Soc., Beng., vol. xxiii, p. 707). The commencement of the longer inscription he read as *Sri Tabachitrasa Khamaspada putrasa* "(gift) of Sri Tabachitra, the son of Khamaspada." These readings, although imperfect and open to amendment, do, nevertheless, give a very good idea of the import of the inscription. The engraving in the Ariana Antiqua is somewhat faulty; but the copy now given has been carefully copied from the original vase. Taking the longer inscription, the first word is a name in the genitive case, and is plainly *Śiva-rachhitasa*. This differs considerably from Colonel Cunningham's reading, but the variation arises from the close resemblance of the letters *t*, *b*, *r*, and *v*—the normal forms of which are clearly distinct, but are sometimes confounded in practice. A close adherence to the normal forms in this instance supplies a well-known name in Sanskrit, *Śiva-rakshitasya*. The next word is also a name which is very difficult to read; indeed, the two versions of it on the vase differ materially. The first character Colonel Cunningham reads *kh*, to which letter it bears a partial though not satisfactory resemblance. The next character differs in the two versions; in the long one it appears to be *d* in the other *mi;* the following character is like *v* in the first, and *dh* in the second; the last letter is in both versions an *n* or *d*. Assuming that the first letter is *kh*, until a more satisfactory reading is arrived at, the transliteration of the name of the longer legend will be *Khaḍavana*, and of the shorter *Khamidhana*. I leave the name in doubt, for future discoveries or more acute investigators to determine. The following word is clearly *putasa*, or *putrasa*, and that succeeding it *danam*. The next character is one to which no equivalent has hitherto been assigned: but I think we have now very good grounds for reading it as *mu*. The syllable *mu*, in "*Śákyamuni*" in the Taxila inscription, is expressed by a character strongly resembling this, and in the same name on the Wardak Vase the *mu* is identical with this character. This is tolerably decisive, and the sentence now before us appears to strengthen the proposed rendering. The *mu* is followed by *hi*, making *muhi*. The Sanskrit *adas*, "that," "this," makes, in several of its cases, *amu;* and I take

this word *muhi* to be a contracted form of the Prakit locative *amuhi*, "in this." But whether this conjecture be right or wrong, and whatever the true value of the letter, there can be little or no doubt of the word in the inscription signifying "here;" the words "gift here," corresponding exactly with the "relic here," which comes in subsequently. Here the shorter legend terminates. Continuing with the longer one, the next word is the verb, or rather participle. It commences with *niya*. The following letter is uncertain; and the engraver appears to have so deemed it, for he has endeavoured to make it more distinct by re-writing it, but with little success. It may be *khi*, *di*, or *ti;* the final character may be read *nam*. The whole word is in all probability *niyatinam*, the causal past participle of the root *pat*, which signifies "made to descend," "lowered," "deposited beneath." The following words are *bhagavat śarirehi;* which words also occur separately at the beginning of the shorter legend. *Sarirehi* is as Burnouf observed the "forme Palie de l'instrumental pluriel," but it is not probable that the word can be used in that sense here. In the longer legend an instrumental plural might possibly be admitted, but the construction would be a very forced one. In the shorter legend it seems quite inadmissible, for no sense can be got out of the phrase "with the holy relics." The word *ehi*, or *ihi*, a dialectical variety of the Prakit *iha*, signifying "here," or "in this," is, doubtless, the true reading, and supplies a consistent and appropriate meaning—*Bhagavat śarír ehi* "Here (or, in this) is the holy relic." The remaining words are but a repetition of the formula in figs. 1 and 2—*Sarva buddhāna puyae*, "in honour of all the Buddhas;" the *n* of *Buddhana* is obliterated, but may be unhesitatingly supplied.

The reading of the shorter legend is then *Bhagavat śarír ehi. Siva-rachchitasa Khamidhana? putasa dana ehi.* "In this is the holy relic. In this is the gift of Siva Rachhita, son of Khamidhana" (?). The reading of the longer one is *Siva-rachhitasa Khaḍavana (Khamidhana) putasa dana muhi niyatinam. Bhagavat śarir ehi sarva buddhāna puyae.* "The gift of Siva Rachhita, son of Khamidhana (?), is here deposited. In this (is placed) the holy relic in honour of all the Buddhas."

In this inscription we have met, for the first time, a variety in the form of the letter *y*, differing but slightly from the letter *ś*, with which it has hitherto been confounded. The difference, though small, is distinctly marked in this inscription; the top line of the *y* being sloped, that of the *ś* quite straight. The final word of this inscription recurs in the Wardak Vase inscription, in which Babu

Rajendra Lal has read it "*puśae*," and has translated it as "nourishment, protection, or prosperity," making it an imaginary noun, supposed to be derived from the root *push*, to cherish or nurture (Journ. As. Soc., Beng.: No. IV, 1861, p. 344). Mr. E. C. Bayley subsequently adopted this reading in an attempt to explain the inscription now under notice[1] (Id.: No. II, 1862, p. 190). The formation of a simple noun meaning "prosperity," from the root, "to cherish," is not very obvious. But it is unnecessary to pursue this enquiry further; the employment of the same formula in two other inscriptions, where the word is clearly written *puyae*, is quite sufficient to determine the true reading.

Manikyala Cylinder.

We now come to some of the important articles extracted by General Ventura from the great tope of Manikyala. A full description of the excavations and of the articles discovered is given in Prinsep's Works (vol. i., p. 93), but it will be sufficient for our present purpose to state that although coins, medals, and other relics were found in several parts of the tope, there were three distinct deposits at the depths, respectively, of 12, 45, and 64 feet, for the security and preservation of which great precautions had been taken. In the first deposit was found an iron or copper box, enclosing one of pure gold, within which were several coins, some of a comparatively late date. The second deposit also consisted of a copper box, enclosing a gold one; but nothing was found in the latter. The third deposit consisted first of a copper box, enclosed in this was a brass cylindrical box on the cover of which an inscription was punched. Within this brass box, and immersed in a thick brown liquid, was a gold cylindrical box, four and a-half inches long, and one and a-half inches in diameter. This box also contained some of the brown liquid and some fragments resembling broken amber. There was besides a small gold coin with the legend OHPKI KOPANO, and some other illegible letters, another small gold coin, and lastly, "a plain disc of silver, upon which have been engraved certain letters evidently calculated and intended to explain the whole mystery" (Prinsep i, 102). The inscription on the lid of the brass cylinder is that given in fig. 4, pl. iii, and that of the silver disc as fig 5 in pl. iv.

Colonel Cunningham has given considerable attention to these.

[1] Mr. Bayley says, "The inscription from Bimaran is also a dedication of a reliquary for the prosperity (pusae) of Sri vechitra dhatra putra."

His reading of the first is—*Swati Siva Chatrapasa Gandaphuka Chatrapa putrasa danatrayam.* "The three gifts of the Satrap Swasti Siva, son of the Satrap Gandaphuka." In explanation of this, he says—"The last four letters of the inscription which, for want of room on the lid of the cylinder, are placed below, I read as *danatrayam*, 'the three gifts.' These, I suppose, to refer to the three cylinders or relic boxes which were deposited in the three separate chambers of the tope" (Jour. As. Soc. Beng. xxiii, 699). Mr. Thomas has already taken exception to the rendering "Swati Siva," preferring "Kavi Siva;" and his amended copy of the legend fully justifies him in this reading. The word *Kavi* signifies "poet" and may possibly bear that meaning here. The following word is unmistakeably *Chhatrapasa.* The next word, which Colonel Cunningham reads Gandaphuka, is somewhat doubtful, but his rendering can hardly be right. He appears to have taken the line at the bottom of the *g* for an *n*, but this addition to the letter is frequently used without any alteration of the sound, as in Bhagavat, in fig. 3, pl. iii. The first letter, then, is a simple *g*, the next is *n*, not *d*. The third is a doubtful compound; the upper part of the letter is identical with the *ph* of the coins of Gondophares, and is observable in Colonel Cunningham's Panjtar inscription, though it is not the usual form of *ph*. Mr. Thomas has already demurred to the rendering of the subjoined letter by *u*, very justly observing that it is different from the usual form of that vowel. This part of the letter resembles *k* in shape, and from the analogy of *shk* in the names of Kanishka and Huvishka in the Manikyala and Wardak inscriptions, would appear to be a *k*,—if it be so, the compound will be *phk*, and the whole word *Ganaphkaka.* The two next words are clearly *Chhatrapa putrasa*, and the following word *dana.* The last word, which Colonel Cunningham reads *trayam*, is open to much doubt, and is important as the basis of his theory as to the three gifts or deposits. The first letter may be either *tr* or *t*,—it has generally been read as *tr* in the word *putra*, but it may be a simple *t*, as it is in the word *Bhagavat* (fig. 3, pl. iii), where the curl of the bottom cannot represent the letter *r*. The final character is a compound which Colonel Cunningham reads *yam*, but the first is preferentially the cerebral nasal, and the whole word therefore is *trañam* or *tañam.* It must be admitted that there is much plausibility in the reading *trayam*, for "it assimilates so well with apparent probabilities." To my eye, however, the word is *trañam*, not *trayam*, and I cannot allow any conjuncture, however plausible, to lead me astray from a strict literal rendering of the

original. The reading *trańa* appears, moreover, to be a very natural one, and requires very little theory to support it. The Sanskrit *tráńa* with the cerebral *n*, as in the word before us, signifies "preserving, protection," and, according to Böhtlingk and Roth, "covering for the body, armour, helmet[1]"; it may therefore be considered as applicable to the brass box on which the inscription is engraved, and in which the "gift" was deposited. For these reasons, the reading now proposed is—

Kavi-Śiva Chhatrapasa Ganaphkaka Chhatrapa putrasa dana trańam. "Casket of the gift of Kavi Śiva Chhatrapa son of Ganaphkaka Chhatrapa."

Manikyala Silver Disc.

The short inscription on the silver disc, which Prinsep considered so important as a key to the whole (fig. 5, p. iv) now claims our attention. Colonel Cunningham has published more than one decipherment and interpretation of this legend. Upon his last reading he has built a very ingenious and attractive theory, concerning which it is desirable to quote his own words. He says—"The upper line (of the inscription) may be read, without hesitation, as *Gomangasa* 'of the emancipated,' or more literally of 'one who has abandoned the body,' from *guna* abandoning, and *angga* the body. The second line I read as *Kanarakasa*, taking the first and fourth letters as cursive forms of *k*. No doubt this plain disc of silver, as J. Prinsep supposed, was intended to explain the whole mystery. This mystery I believe to be explained by my reading of the two words as *Gomangasa Kanarakasa*, or '(relics) of the emancipated Kanerki.' According to this reading, the great tope of Manikyala was the Mausoleum of the Indo-Scythian Kanerki or Kanishka, the paramount ruler of Kabul, Kashmir, and the Punjab, about the beginning of the Christian era. The Brown liquid, therefore, most probably contained the mortal remains of the great Indo-Scythian emperor, mixed with a portion of sandal wood or other ashes from his funeral pile" (Jour. As. Soc. Beng. vol. xxiii, 701).

I very much regret that I am unable to acquiesce in this theory. The true interpretation of the legend has long seemed to me to be much more simple than that proposed by Colonel Cunningham. I must confess that in the examination of old inscriptions, and

[1] Schutz für den Körper, Harnisch, Helm u.s.w.

especially in these Buddhist inscriptions, my turn of mind inclines me to seek for the simple rather than the mystic, for a plain ordinary meaning, intelligible to all contemporaries, in preference to a refined and spiritual expression, comprehensible only by the learned and the priesthood. Mr. Thomas has already demurred to this interpretation, and very pertinently remarks that "no theory at all is preferable to a bad one; the negative position is not likely to mislead, the positive converse is."

The reading of the first word as *Gomangasa* seems to me untenable, and the interpretation of that reading to be equally inadmissible. The first letter with the subjoined vowel is certainly *go*, the next letter is *m;* thus far our readings coincide. The following letter, which Col. C. reads *ng*[1], is clearly *n*,—the dental, as I believe, but the cerebral, according to Mr. Thomas,—at any rate it most closely resembles the *n* in the word *danam*, the curve not being sufficiently deep for the cerebral. The final letter is *sa;* thus there is only a difference of one letter between us; Colonel Cunningham's reading being *Gomangasa*, that now proposed *Gomanasa*. Let us now examine if there is anything in the proposed etymology of *Gomangasa* to make that reading preferable. The derivation of the term is said to be from *gun*, abandoning, and *angga*, body. In the first place, there is the fatal objection that *guń* cannot by any conceivable means become *gom*, nor is any suggestion offered in explanation of the assumed change. The meaning "abandoning, leaving" is certainly to be found under the substantive *Guńa* in Wilson's Dictionary, but Bohtlingk and Roth remark upon it as an unusual sense (besondere Bedienst); and no such meaning is given to the word in the Pali Amera Kosha (Clough, pp. 51, 104, 107). But it is with the verb or participle, and not the noun, that we are concerned in this compound word, and no such signification is traceable to the root in any of the authorities consulted. Wilson gives to the root the meanings to "invite, advise"; Westergaard agrees, "Consilium dare, suadere"; Clough's List of Pali roots says "to accustom." It is not to be found in Delius' Radices Pracriticæ, nor can I find it in Cowell's Vararuchi. Taking all these points into consideration, it is not too much to say that Colonel Cunningham's interpretation is inadmissible.

[1] "It is not a little singular that Major Cunningham should have fallen in with so many of these otherwise rare letters *ng*,—they are infrequent enough in the ordinary language, but we have no single example of their use in the entire Kapur di Giri inscription, and Prinsep was a long time before he detected the sign at all in the Pali Lat alphabet."—Thomas in Prinsep, vol. i, p. 103, note.

Before offering any suggestion as to the import of this word, it seems desirable to examine the second word which Colonel Cunningham reads *Kanarakasa*. Mr. Thomas, though differing decidedly from this rendering, nevertheless "concurs in the acceptance of the opening letter as *k*," which is the more surprising from the fact of Colonel Cunningham having felt a difficulty in this reading which he got over only by supposing the letter to be "a cursive form." If in "cursive" writing it be allowable to reverse the form of a letter, to turn it bodily round, then this letter may be a *k*, not otherwise. The outline of the letter most closely resembles the normal form of the letter *v*, the vowel *o* being subjoined in the same manner as to the letter *g* in the preceding word. The next letter is too angular in the head, and differs so distinctly from the *n* in the word above, that it cannot be so read; to me it is preferentially *d*. The next letter is clearly *v*. The following is a very doubtful character; it is probably the letter *t* in combination with some consonant, possibly *r*. The last letter is *s*. The word may then be read *Vodavartasa*,—with doubt and hesitation certainly, but with much greater adherence to the regular forms of the letters than in the reading *Kanarakasa*. This rendering of *Kanarakasa* must have sprung from a preconceived notion as to what the word ought to be, and would probably never have been proposed if a coin of "Kanerki" had not been found with the piece of silver.

Gomanasa appears to be the gen. case of the Sanskrit *gomat*, making *Gomān* in the nom., and *Gomatas* in the gen. The word signifies "rich in kine," being in fact a word of similar formation and import to the well-known Govind and Gopāl. The word *Goma* is given in the Pali Vocabulary with this meaning. There is, however, another derivative word in Sanskrit, exactly similar in character, and having precisely the same primitive meaning, which has the further signification of "an attendant on a Buddha," according to Wilson, and of "a Buddhist lay brother," according to Böhtlingk and Roth. This word is *Gomin*, or *Gomī*,—may not the word *Gomān*, *Goma*, have been used in a similar sense? We have then a choice of two interpretations,—*Gomanasa* may be taken as a name or title, like Govind; or it may mean "of the lay brother." The other word, *Vodavartasa*, if that be the true reading, is connected with the Sans. *udvartta*, "abounding, plentiful," but it is probably used here as a name. Accordingly, we may conjecturally and with hesitation presume the legend to signify—"Of the lay brother *Vodavarta*."

Seal Ring.

Fig. 6, pl. iv, is a defective inscription on a copper seal procured by Mr. Bayley in the Punjab. "As the letters are reversed, the seal most probably belonged to one of these Indian satraps, who must have used it for stamping and authenticating his public documents. The Ariano Pali legend has not been satisfactorily made out, but it appears to be *Sivasena Chatrapa Atri naram Pathanavare* "(Sealed) by Sivasena, of the race of Atri, Satrap of Pothowar" (Cunningham, Jour. As. Soc. Beng., xxiii, 698). The learned writer goes on to suggest that "Pathanáwáré may probably be considered as the original form of the present Pothowar, which is a part of the Rawal Pindi district." The letters of this short legend are stiff and well defined, the forms approaching the Kapur di giri type, especially in the letter *chh*. Very little change appears necessary in the reading above proposed, but that little involves some alteration in the interpretation. The reading now proposed is *Śivasena Chhatrapa Atridara paṭana are* . . . "Śivasena Chhatrapa, city of Atridara . . ." The letter after the word Atri, which I have rendered *d*, is more like that letter than *n*, but I am not disposed to insist upon my reading if any reason can be shown for preferring *n*,—the letter in question may possibly be a stiffly formed *n*. I cannot find the *m* which Colonel Cunningham gives in his reading *naram*, and the letter which I have read *r* differs somewhat from the true shape as exemplified in the last letter of the inscription. The next difference is a slight one, a substitution of *ṭ* for *th;* but in the last letter but one there is a difference of more importance, as the notion of the modern Pothowar being connected with this inscription, depends in some measure upon the reading of the two final letters. Colonel Cunningham's reading of these letters is *vare;* the *re* is indubitable, but it is equally clear that the other letter is *a*, and not *v*, for the letter is exactly like the *a* in Atri, and quite different from the *v* of Śiva. The final words, then, are *Paṭana are*, the former being the Sans *Paṭṭana* city; and the latter, in all probability, a mere fragment of a word. I have not succeeded in finding any city of *Atridara* in the authorities I have consulted, but the Brahminical tribe of *Atri* was widely spread in the north-west of India from the earliest times, and the name was also borne by a tribe of Rajputs mentioned in the Maha-Bharat.

The Manikyala Stone Inscription.—Plate IX.

The Manikyala inscription discovered by M. Court, and which is the subject of Plate ix, baffled the acumen and ingenuity of Prinsep, and has remained to the present time the opprobrium of scholars and antiquaries. The familiar words *maharaja* and *chhatrapa* were picked out at once, and the word *vihar* in the left hand margin has since been read. Colonel Cunningham, in his paper so frequently referred to, made a considerable advance by reading the names of *Kanishka* and *Gushan*, but his other speculations upon the inscription are more than doubtful. He put them forward, indeed, with considerable hesitation. Taking the end of the fourth line he says the name of the Satrap "is unfortunately doubtful, but I venture to read the name as Gandaphuka,[1] which I will retain for the present for want of a better or more probable reading. The inscription appears to me to contain the following important facts:—'In the year 446, in the reign of Kanishka, Maharaja of the Gushang (tribe) the Satrap erected a tope (for what purpose I have not yet been able to decipher).' As a proof of his attachment to the Buddhist faith, the inscription ends with the words *Sachadhama-pidasa*, 'of the crown of the true *dharma*.'" That the inscription refers to the building of a tope may very fairly be predicated, but I am obliged to reject unhesitatingly the supposed name, *Gandaphuka*, and the reading of *Sacha-dhama-pidasa*.

The foregoing is, I believe, a fair summary of the decipherments of this inscription, and I fear that I cannot add very much to them. Some few words, however, seem to be intelligible, and I hope to aid the progress of discovery by making them known, and by pointing out possible variants from the published plate. The original stone had, apparently, a very uneven surface originally, and time has so added to its imperfections that no two copies of the inscription agree in all the details. I possess several independent tracings, three of Mr. Thomas's and two of my own, and I propose to point out the important variations which occur in them.

The first line of the inscription appears to be independent, and to serve as a kind of heading to the rest, being, perhaps, somewhat similar in character to the "Sacred to the Memory" of our gravestones. The reading seems to be *Bhatarasya Tabuddhisa aga patiśae*,

[1] This is Col. Cunningham's reading of the name on Gen. Ventura's cylinder, and which he supposes to occur again in this inscription. The reading of the name on the cylinder has been already noticed in page 244.

Fig. 2.

"In hope of the future of the brother Tabuddhi." The meaning of the word *aga* will be discussed in the notes on the Wardak Urn inscription, in which it occurs many times. The word *patiaśa* is, probably, the Sanskrit *pratyáśá*, "reliance, hope"—one tracing makes the *pati* into *pali*, but this would make very little, if any, alteration in the meaning.

The body of the inscription opens with the date "*San* 18." This is succeeded by the character *sp*, which is followed by a letter wholly illegible; the next letter is *pu*, then comes one without a head, but which is, probably, *rv* or *rt*, for the conjunct *r* is distinct; the last of this series is again *sp*. It is difficult to make any guess at the import of these five syllables beginning and ending with *sp*; the word *púrva*, "old, prior, chief," is probably included among them, and the last may be *aspa*, a word found on the coins (Sans. *aśwa*); the whole is, perhaps, a name or title. The next word is *maharajasa*, "of the great King;" the object of this genitive case is not very manifest, it may, however, refer to the date "In the year 18 of the great King," but this is far too doubtful to form the basis of any theory. The following word is unmistakeably *Kaneshka*, but it has for its final a letter which all the tracings agree upon, and which cannot, I think, be read otherwise than as *ram*, thus, apparently, forming a word in the genitive plural. The succeeding words are clear *Gushanna vaśa samvardhaka*, "Increaser of the dominion of the Kaneshkaras and Gushans." The last word may be read without the final *ka*, and may signify simply "increase." *Vaśa* may be either *vanśa*, "family," or *vaśa*, "authority, supremacy;" but the latter seems preferable. The next letter is a clear *l* in the plate, but some tracings make it resemble an *e*, and as such it might be the dative or locative of the word *Samvardhaka*. The last letter of the line is *l*. The first letter in the following line is *no* or *nu* in the plate, but one tracing makes it *hi*, and another more like *da*. The following letters are *tena śaga*, but the first of them may be *re*, or even *d*, for its outline is not very distinct: and the last letter has an *o* added to it in some copies. I am quite at a loss to suggest any probable meaning for these six or seven letters, and am afraid that the sense must remain in obscurity. The next words are *vespaśisa chhatrapasa*, the first of which will be found repeated in the last line. The next line, and the line following (five and six) begin with a series of letters which may be considered identical, notwithstanding some little varieties in the outlines. The copies differ most in respect of the second letter of the upper line; some make it, doubtfully, *vi*, but the *i*

should probably be nothing more than the upward bend peculiar to the consonant. Continuing our reading, the fifth line begins with *huta* (or *hoba*) *murtasa*, and continues *tasa apanage vihare;* the last letter *re* is somewhat obscure, but is not doubtful. The rendering *mu* has been already referred to in the notes upon fig. 3 of plate iii, and will again come under notice in the Wardak Inscription. *Vespasisa Chhatrapasa Hutamurtasa* are all genitives, and must be taken together; they, probably, have their complement in some of the words preceding them, while the following word *tasa*, the genitive of the pronoun, would more naturally relate to what follows. The words *Vespasi* and *Hutamurta* are, probably, names or titles, standing, as they do, in agreement with *Chhatrapa*. A further reason for considering them to be names or titles is that *Huta*, apparently, is found in the last line connected with *Vespasi*, thus, "*Huta Vespasi.*" In Sanskrit, *huta* signifies "offered sacrificed," and *murta* may represent *múrtti*, "form, body," *múrtta*, "formed, swooned," or, *mrita*, "dead." None of these, however, supply any intelligible meaning to the context. I take the words *tasa apanage vihare*, to signify "in his own vihar," for it is not improbable that the word *apanage* is connected with the Hindi *áp*, *apna*, from the Sanskrit *átman*; or, it may be a proper name "in his *Vihar* of *Apanaga.*" The sixth line begins "*Huta (Hoba) murta*" in the nominative, followed by the words *atra*, "here," and *nana*, "many, various." These are succeeded by two words, which I pretty confidently render as *Bhagava Budha;* the letters *bh*, *v*, and *dh*, are clear and are so given in all the copies; a copy of my own makes the second letter distinctly *ga*, and the unknown form given in the plate closely resembles that letter. The most doubtful is the *bu*, which is more like *su* in some of the tracings. Taking all the letters together, however, there can be very little hesitation in recognizing the words *Bhagava Budha*. The succeeding letter is an unknown one, and we have nothing here to suggest its power. The plate gives the true form graven on the stone, and the only point open to doubt, is, whether the bend of the down stroke is sufficiently distinct to form the nasal. The last letter of the line is, apparently, *va*.

The last line is in a very unsatisfactory condition, and will, I fear, remain unintelligible until the preceding context is so clearly understood as to suggest the words to be expected here. Two tracings make the line to begin with *a*, but this is, probably, a mere fracture. Several copies agree in making the first letter *pa*, and the second *la*, but one of my own makes the latter resemble *ka*, as in

the engraving. The following character is pretty clearly *sta*, and that after it *va*. The next letter is very doubtful; besides the form given in the engraving, we have the variants *ve* and *śe* in different copies. The following letters *ri*, *sa*, are sufficiently distinct. The next two are obscure, but the plate gives a fair representation of them, and no variant is suggested. The following letter may possibly be *e*, not *hu;* and the next, which is obscure, must be either *v* or *t*. Then comes the word *vespasi*. The following letter is clear on the stone, and may be a badly-formed *a*; the next seems to be a defective *n;* then comes *khu*, followed by two unknown characters, and the finals are *e* and *na*. The third letter from the end may be *dhi* or *chi*, but is very doubtful.

The short passage in the left margin commences with a series of instrumental cases connected by the copulative *cha*. The first words may be read as *Buritena cha vihara;* then come the letters *kara*, followed by an unknown form. The next letter is possibly a defective *k*, and the last is *na*. From the collocation of the words there can be little hesitation in admitting this last word to be in the instrumental case, and there is very little doubt in my mind as to the meaning of the word, which I suppose to be, "maker, builder." The following word reads *samvena*, but probably is either intended for *sarvena*, or is used in the same sense. The next word is *cha*, and that following is *parivarena*, the *re* being defective at the point where the characteristic twist of the *r* should appear. The following word is *saddhae*, and but for its commencing with the dental *s* I should take it to stand for *śraddhá*, "faith"—*sandhá*, "union, association," seems, however, to be the more suitable equivalent. The following words are clearly *tena kusal-mulena*, for some tracings indicate the presence of the *u* wanting to the *k*, and we have a repetition of the phrase *imena kusal-mulena* on the Wardak urn. I take the word *mula*, if that be the true reading, to be a derivative, signifying "foundation," from the root *mul*, to plant, and in Pali "to found." The passage thus far may, therefore, be somewhat conjecturally rendered as "Buritena, the architect of this vihar, and his whole train of workmen in union by this meritorious foundation," do something which I can only guess at, for the remainder of the passage is very indistinct and unintelligible. The first letter is *tu*, as given in the plate, but the next is so obscure that its true outline cannot be traced—*st*, the next letter, is tolerably clear, but *hi* seems a possible variant and a more likely form. The next letter, which is *di* in the plate is converted distinctly into *cha* in two tracings. The next two characters are *spa*,

va, and the next, which is *ka* in the plate, may also be *spa*—that next in order may be *sta* or *hi*—the last is *cha*. There seems then to be fair ground for considering these letters to form two words ending in *sta* or *hi*, and the conjunction *cha* to be placed between them; if the former is the right rendering, they are probably verbs; but if the latter, instrumental plurals. This short inscription terminates with the copulative *cha*, which affords good reason for supposing it to be connected with the two lines on the opposite side, where we find the same prevalence of instrumental cases. The first words of this may be read as *Sandha budhi lena cha*, for the *i* to the second *dh* is clear in two copies. This would appear to be a name. The next letter is very obscure, but probably *va*. The next is still more doubtful; one copy makes it *si*, another *śo*, the others incline to the form of *k*, as in the plate: the following letter is also doubtful, but the plate appears to have the best rendering. The last two letters are clearly "*gena*," another instrumental case. It is impossible to make much out of this beyond assuming that the first is a name in the instrumental case, followed by a conjunction; which makes it probable that the last word, in the same case, is a name also. The last line contains the date, and has already been examined. It appears to read *Karttikasa masa divasa* 20—"Twentieth day of Karttika."

The two words written upside down at the top of the inscription may be read *Sachhasana bhavatu*, for there seems to be a stroke under the second letter, making it *chh* in preference to *m*. This may be rendered "May it be manifest"—"May it be clear to all." The Sanskrit *Sákshát*, has the signification of "manifest" being derived from *aksha*, the eye.

Fig. 2 of plate ix is the bi-literal inscription discovered by Mr. E. C. Bayley in the Kangra hills. These counterpart legends are stated to be "cut on two granite boulders, about thirty yards apart." I shall simply quote the rendering of these as given in Thomas's Prinsep (vol. i., p 160). Bactrian, *Krishanyaśasa aramá;* "the garden of Krishnayasa." Indian, *Krashnayaśasya arama madantasya:* "the garden of the happy Krishnayasa."

Fig. 3 of Plate ix.—This is taken from the lid of a brass box, which "seems to have enclosed the usual silver and gold boxes devoted to the enshrinement of relics." It was included among the relics sent home by Mr. Masson, but the place of its discovery is unknown. The inscription seems to have been badly executed at

the first, and the box has been very much rubbed, so that a correct delineation is difficult, if not impossible. I have a copy of my own which differs in some respects from that in the plate. There can be no doubt that we ought to begin with the date "*San* 18," &c., which has already been examined, and need not be further referred to here. After the date is a small blank, and then the inscription begins with what appears to be a name in the gen. case—*Hasharesya*. Taking the letters in order they read *ga*, *go* or *gi*, *la* or *vi*, the letter we have assumed to be *mu*, and then two doubtful letters, possibly both of them *n*, or one *n* and the other *d*. My copy makes the next word *śarir*, and the last word seems to be *parishkaśti*, or *parishpaśti*, for the character read *shp* differs somewhat from the *shk* of the Manikyala and Wardak inscriptions, and the last compound *śti* has not been met with before. The word seems to be connected with the root *káś*, "to shine," or *spaś*, "to touch, take, connect," and to both of which the sense of "making manifest" is applicable.

Wardak Inscription.—Plate X.

The inscription upon the Wardak urn is the longest we possess in the Bactrian character, after that of Kapur di giri. It is in a most perfect state of preservation, not a single letter has been obliterated, yet such are the difficulties attending the interpretation of these inscriptions that high authority pronounced this record to be written in no Sanskrit dialect. This opinion has been shown to be erroneous; and some isolated passages have been translated, but no satisfactory interpretation of the whole document has yet been accomplished—and I cannot boast of a complete success. I hope, however, to clear up a few points, and to render some service by stating the objections which appear against some of the readings and interpretations proposed by my fellow-labourer Babu Rajendra Lal. The Bengal Journal, No. IV, of 1861, contains his proposed translation of the document, but the writer disclaims all desire of having it looked upon "as other than tentative," and expresses himself "fully prepared to surrender the version whenever further research will suggest another better fitted to suit the requirements of the monument." Before proceeding to criticise I will perform the more grateful task of applauding the success he has achieved, especially in the reading of the name of the king, and in identifying him with the Hushka of the Raja Tarangini. This alone would have been a valuable gain; but I am disposed to go further, and agree, in a great measure, with

Colonel Cunningham, in believing that however much the details may be improved, a very fair notion of the general scope of the record has been obtained.

Before entering upon a consideration of the document I must express my acquiescence in the opinions of Mr. Thomas and Rajendra Lal as to the want of due care in the delineation of the characters. They have been formed by a firm decided hand; but so little trouble has been taken to mark the true outlines and nicer shades of distinction that it would seem as if the work had been executed from a copy by an engraver who was ignorant of the letters or language: take for an example the letter *bh* as it appears in the frequently recurring word *bhavatu*. It is also desirable that some guiding principle should be first laid down for discriminating the letters *r*, *t*, and *v*, which differ in some respects from the normal forms. In the best examples of writing, as we have already seen, the *r* and the *v* are about equal in height, if there is any difference the *v* is longer than the *r*. In this document, however, the *v* appears to be generally short in the stem, but the main point of distinction is observed; the horizontal line of the *v* being straight, that of the *r* curved at the point. The *t* is more true to the real form, being generally short in the perpendicular, and curled at the point of the horizontal. The line at the bottom of the letter *g* would appear to be an optional addition, for it is sometimes given and sometimes omitted in the same word *agabhaga*, and it can hardly have any power in the word *bhagavan*.

The inscription opens with *Sam*, for *Samvatsara*, year; then follow the figures for 20, 20, 10 and 1, the year, therefore, is 51. The words *Másya*, or *Mássa*, "of the month;" and *Artamisiyasastehi*, "Artemisius," follow, and are succeeded by figures representing 15. The date, then, is "15th Artemisius of the year 51." The value of this date has already been discussed in a previous page, and needs no further notice here.

Rajendra Lal's amended reading of the first line, as given in a note at the end of his article, is—

"*Imena gatrigeno Samagusa putra Vagamitegaso iya khaba dharmasatasa siga Vagamitega Vihar Mritwa-vrimri Bhagavat Sákyadanna śarir paridhareti* or *patidhareti*."

"In this gatriga (cross way?) the son of Samaguso of (the village) of Vagamitega has placed this pillar (of religion and virtue??), and that monastery of Vagamitega for the relics of the divine Śakya."

The reading of the first two words is clearly *imena gatrigena*,

1st line.

2nd line.

3rd line.

4th line

Fig. 2.



there is no *o* at the end of the last word, and its insertion in the reading is probably a mere slip of the transcriber or printer. The following letter is, I think, *bh*, for it is identical in shape with the undoubted *bh*, five letters from the end of the third line; if it be a sibilant it must be the cerebral *sh*, but the *bh* is preferable for the reason given. A similar variety in the form of the letter *k* is observable in the fourth letter of line 2. The letters *magu* succeed, but it is by no means clear that the final is *s*, or rather *sy* or *ss*, the sign of the genitive, as it differs materially from the final *sy* or *ss* of the word *másya* in the date, and of the word *Vagamaregasya* a few letters further on. There are no means at present for determining its true value, but the upper part of the character appears to be *l* and the lower part a conjunct *y;* the preceding letters being Bhamagu, we may arbitrarily read the whole as a name Bhamagu*lya*. The next word is *putra*, and I think there can be no doubt of the following one being *Vagamaregasya*, not *Vagamitegaso*, for there is no *i* perceptible, and the middle consonant has the true normal form of the *r*. The next word is *iya*, and then follows a series of 9 letters, which are perhaps the most difficult in the inscription, and out of which nothing satisfactory can be extracted. Mr. Thomas's tentative transcription and Rajendra's first and second versions are as follows:—

Thomas.—*Khaañagrashaña—śiga.*
Rajendra.—1. *Khasavamri sekhala—siga.*
,, 2. *Khaba dharmasatasa—siga.*

The first letter may be admitted to be *kh*. The next is doubtful; it may be a *b*, for it is like the initial of the word which appears to be *Budha*, in line 6 of the Manikyala inscription, or it may be a badly formed *a;* the succeeding letter I have no hesitation in reading as *d*, and that following as *mi* or *mmi*, making altogether *khabadami* or *khaadammi*, which I take to be a word in the locative case, the horizontal stroke at the bottom of the *mi* possibly having the power of doubling the consonant, and making *mmi* the common Prakrit form of the locative. The *mi* in *Artemisiyas* and *mitra* has no such mark appended; some value must, therefore, be assigned to it, and that which I have suggested is the most obvious. The next letter is a very bad one; it may be *k*, *bh* or *sh;* let us take it as *ka*. The following letter is *da*, the next a badly formed *l*, like the *l* in the undoubted word *kusal* at the beginning of line 2; the last two letters are *śiga*, upon which all are agreed. The reading then is *khabadammi kadala śiga;* the first word may be the Sanskrit *stambha*, and the last

may be the representative of *śringa* as suggested, but I am at a loss to propose any meaning for the whole. I would gladly adopt Rajendra's last version, could I find the least warrant for it, as it affords an intelligible meaning; but a strict adherence to the text forbids the reading, and compels me likewise to reject a fancy I have sometimes indulged of the latter *mmi* being an imperfectly formed *g*, which supposition would give us the word *dagabha*. We now come to a more intelligible passage, *Vaga-mariga viharammi*, "in the vihara of Vaga-mariga." The next letter is *tu;* but the following one is doubtful, probably *sti;* the next is *mmi*, making altogether *tustimmi*, apparently a locative. The nearest Sanskrit equivalent is *stuti* "praise;" but the Pali form of that word is *ṭuti*, and *tusti* is hardly admissible for the Prakrit. The next word is *Bhagavan*, not *Bhagavat*, but the following name is doubtful; it begins with *śa*, and, although the next compound is more like *shy* than *ky*, the latter is preferable; the *k* is supported by the word *kusal* in the next line, and a warrant for the conjunct *y* may be found in *Masya* and *Vaga-maregasya*. We thus get *Śakya*. The power of the next letter has hitherto been unknown. It resembles, however, the indubitable *mu* of the Taxila Plate, and as that sound is required here, we may assume it to have that power until a better offers. It is followed by an *n* apparently doubled; but there can be no doubt of the word being in the gen. and so we will read *Śakyamunna*, "of Śákya-muni." The last two words are distinctly *śarir paridhareti* or *paridharedi*, the latter being the true Prakrit form. The following is a consecutive reading, the doubtful letters being in Roman:—

*Imena gatrigena Bhamagu*lya *putra Vaga-maregasya iya Khabadammi* Ka*dala śiga Vaga-mariga viharammi ṭustimmi Bhagavan Śa*kyamunna *śarir paridharedi.*

I can find no authority supplying a meaning to the word *gatriga*. Rajendra Lal says, it may "possibly" have the sense of "crossway;" but this compels him to read "imena gatrigena" as a locative, though the phrase is unequivocally in the instrumental. May not the word apply to the urn in which the relic would seem to have been deposited, and be read, "With this urn." The following words apparently mean, "Vaga-marega, the son of Bhamagulya," and the donor in a subsequent passage distinctly calls himself "Hashtuna marega," leaving little room for doubt as to "Marega" being the name of his family or sect. *Vaga* is possibly the Sans. *varga*, "class." The following doubtful words are not suggestive of any intelligible rendering but *Vaga-mariga viharammi* may be translated "in the Vihara of Vaga-mariga." The following

obscure word, *tustimmi* may possibly signify "in praise." *Bhagavan Śakyamunna śarir*, means "the relic of the Holy Śákya," and the last word *paridhareti* or *paridharedi* is the Prakrit Causal form, from the root *dhṛi*, to hold, to keep—and may be rendered as "places, deposits." The obscurities in this passage are so great as to deter me from venturing upon any attempt at a literal translation, but the general meaning is, I think, sufficiently clear; viz.: "With this (votive urn?) of Vaga-marega, the son of Bhamagulya there is deposited a relic of the Holy Śákya in the Vihar of Vaga-mariga."

Rajendra's reading of the next passage is *Imena Kusalākhilena Mahārāja rājātirāja Huvishkasya agabhagae bhavatu*, which he translates, "May the fruit of this depository of innumerable blessings (relic-deposit) be conducive to the good fortune of Huvishka, the great king and king of kings."

There is little objection to this reading beyond that which Mr. Bayley made to the reading of the 7th letter as *khi*—it is certainly not the same as the *kh* in the preceding line. We have in the name of Śakyamunna assumed its power to be *mu*, and for consistency will so read it here. The reading will then be—*Imena kusal mulena maha-raja rajatiraja Huveshkasya agabhagae bhavatu*. The second and third words occur in the Manikyala stone, on the left-hand side, where the initial is clearly *k*; this removes all doubt which might arise from the malformation of the letter on the urn. The reading of the second word is *mula*, the first letter appearing to be *mu* for the reasons above stated. This word I have supposed to mean "foundation" in the Mankyala inscription. The gist of this and of many other passages depends entirely upon the words *agabhagae*. This phrase occurs several times in this form, that is, in the locative case, which is employed in Pali for the dative, and may also stand for the inst. and genitive. At the end of the 3rd line, however, *aga-bhaga* the nominative is found; and in two instances we have a variety of the phrase in *agabhaga patišaśanam* (or *patiyaśanam*) *bhavatu*. Rajendra Lal has discussed the signification of the term at some length. In the first place he rejects Mr. Bayley's idea of its meaning "an expiation for sin," on the ground that the Sanskrit *agha*, "sin," would in all likelihood have been written with the Bactrian *gh*, and not *g*. In Pali, however, there is a word *aga* or *agu*, meaning "sin" (Clough's Pali Vocab., p. 10), which would seem to be connected with a root *ang*; as in the Dhammapada, we meet the word *anangana*, "sinless." (Faussböll Dhammapada, pp. 23, 295; Weber in Zeitschrift Deutsch. Morg. Gesell, vol. xiv, p. 49). In Sanskrit also we have *Ágas*, "sin."

It is clear then that we may adopt the signification "sin," if desirable; and if taken in that sense the second word *bhaga* must stand for the Sanscrit *bhanga*, "breaking," "defeat." Another reading which suggests itself is the Sanskrit *anga-bhága*, "a portion of the body;" and a third is that which Rajendra adopts *agra-bhága*, "first or chief share," but which he understands to signify "good fortune" in the record before us. Let us now see if the word *patiśaśanam* will help us. Rajendra reads this word "*parisasana*," and takes it to be the Sanskrit "*pratiśásana*," which he renders "control." The true reading of the word in the inscription is *pati* (or *paṭi*), not *pari*, being in this respect nearer to the equivalent proposed; but *śásana* is hardly admissible, because the second sibilant of the Sanskrit word is dental, while that in the inscription is palatal, and the sibilants are so clearly and regularly distinguished in Bactrian that very strong evidence is required to establish a case of confusion. The word may be either *patiśaśanam*, or *patiyayanam*, for it is difficult to distinguish *ś* from *y*, and the changes may be rung upon these two letters—the curve of the right limb of the first of them may also be intended for the anuswára. I cannot think of any satisfactory Sanskrit equivalent, for the only words which suggest themselves are *pratiśraya*, "a house, refuge," and a derivative from either *śaśwat*, "continually, perpetually," or *yaśas*, "fame." The word *aga* makes its appearance in a different combination in the Manikyala inscription, the first line of which reads, "*bhatarasya Tabuddhisa aga patiaśae (or paliaśae)*; the last word is the Sanskrit *pratyáśá* "trust, confidence," and hence this line appears to signify "In hope of the '*Aga*' of the brother Tabuddhi." If this be anything like the true sense all idea of *aga* signifying "sin" must be set aside. It is also very difficult to see how the word *anga*, "body," can have any application, and we are consequently driven back upon the word *agra*, "chief, supreme," which would make the above line read, "In supreme hope of the brother Tabuddhi"—a vague and unconvincing result. *Agra*, however, as a substantive, has the meaning of "top, summit," and hence may signify "exaltation," "preferment." The same word under the form *ágá* is used in Hindi, with the sense of "the front," "that which is before," "the Future;" and I am strongly inclined to believe that the latter is the true meaning of the word in the inscription. At any rate it seems the most suitable of all the possible equivalents that we have examined, and it may accordingly be adopted. I shall gladly surrender it if a more appropriate or authoritative rendering is offered. Taking the word then to mean "the Future," *bhága* must signify "lot," and

patiśśśanam, we may assume to mean "perpetual," the whole meaning "a lasting portion in the world to come." Turning now to the passage, a further difficulty meets us in the construction of the sentence; it begins with an instrumental, which is followed by a genitive, and ends with a locative and the verb. There seems to be no help for this, but to take one as a nominative, when we shall find the sense to be, "May this meritorious foundation tend to (procure) a lasting future lot for Huvishka, the great king, king of kings." The difference after all, between this and Rajendra's version, is but little; an exhaustive examination of all conceivable renderings of the phrase *agabhagae* seemed, however, to be desirable, and has not been, I hope, altogether unprofitable.

The next two sentences are about the clearest in the whole inscription; Rajendra reads them—

Mátápitá náme pushae bhavatu. Bhráta náme hasphanimategasya pushae bhavatu. "May it be to prosperity of the name (my) mother and father—may it be to the prosperity of my brother Hasphanimatega."

I can find no warrant for the reading "*náme*," which appears to have troubled Rajendra in his translation; and the *me* is manifestly the possessive pronoun. I think the compound letter in the name is clearly "*sht*."—The word which he reads "*pusae*," and for which he constructs the meaning "nourishment, prosperity," from the root *push* to cherish, is without doubt the *puyae* (Sans. *pujá*) of the Taxila Inscription. In the Bimaran Vase we have seen the same word written with a character intermediate between the *y* and *ś*, and in this inscription the two characters appear to be confounded. The ordinary form of the *y* never occurs in this Wardak inscription, but it cannot be conceived that the letter is altogether absent. The reading of these sentences is—

Máda pidar me puyae bhavatu. Bhradar me Hashtunamaregasya puyae bhavatu. "May it be to the honour of my father and mother—may it be to the honour of the brothers of me, Hashtunamarega." The final *r* of *pidar* and *bhradar* seems to represent the genitive plural.

Rajendra's reading of the next clause is—*Śuchyami bhushana tigamitrasya bhratigana pushae bhavatu.* "May it be to the prosperity of the brothers of Tigamitra, the ornament of Suchyami." "The doubtful word," he says, "being the first, *Suchyami*." To me this word or words seems not at all doubtful, but my reading is different. The first letter is *śo* not *su*, the next a simple *ch* not *chy*, and Rajendra so reads the same character three times in the last line, and the third is *me* and not *mi*—the whole making *śocha me*,

"my purity," *śocha* being the Sanskrit *śaucha*. Rajendra's *bhushana* is inadmissible, the sibilant, if it be one, is palatal, not cerebral, and ought not to be confounded with it. The letter seems to be preferably *y*, making *bhuya*, which I suppose to represent the Sanskrit *bhúyát*, the optative of *bhú*, giving the sense "May it be to my purity." The remainder of the sentence reads *natiga mitrasa bhatigana puyae bhavatu*. The first word I suppose to be the Sanskrit *naptri* "a grandson," or preferably *jnáta*, "a relative," which becomes *nátá* in Hindi, and supplies a meaning consistent with the context. *Bhatigana*, a genitive plural, which Rajendra read as *bhrátigana* "brothers," is more probably the Sans. *bhartti*, "protector;" for a clause has been specially devoted to the brother, and the orthography of the word differs. The reading of this clause is *Śocha me bhuya. Natiga mitrasa bhatigana puyae bhavatu.* "May it be to my purity—may it tend to the honour of relative and friend (and) of (my) protectors."

Rajendra's reading of the next clause is *Mahiśachya Ugamategasya aga-bhaga pariśáśana bhavatu*, "May it ensure to the highly pure (or the great minister) Ugamatega control over good fortune." The first word is either *Mahiśácha* or *Mahiyacha*, for it is impossible to distinguish with certainty whether the character is intended for *ś* or *y*; the word occurs again lower down, and there the form of the letter gives some ground for reading it as *y*. Rajendra supposes the word equivalent to *Mahá suchi* "highly pure," or *mahá sachiba*, "great minister;" but neither of these is satisfactory in sense, and the orthography is objectionable. The whole sentence reads, *Mahiśacha Vaga-mareganám aga-bhaga patiśaśana bhavatu*. The first word appears to be a term qualifying the second, which, as we have seen above, is the name of the donor's family or class, and one would expect it to have some religious or sectarial meaning. There was a sect of the school of Rahula designated "mahíśáka" (Bournouf, Int. p. 446) and this term is so like the one in our text, that we may presume them to have some connection. This clause then will read as follows, "May this work tend to the lasting (happy) future lot of the *Mahiśacha Vaga-maregas*."

Rajendra's reading of the first clause in the third line is *Sarvasatwena árya gatichiñae bhavatu*, "May it prove conducive to the moral improvement of mankind." I read "*Sarva sattana aroga dachhinae bhavatu*." The letter *tt* (or *tw*) is a new form, but the body of it is clearly *t*. The formation of the *chhi* is curious, the stem extending above the semicircular top, and so far resembling *mi*. As, however, the vowel is appended in addition there can be no hesitation in reading it as *chhi*. The vowel mark *i* is more

distinct on the urn itself, passing, as it ought, right through the letter. *Sattana* is a genitive plural from the Sans. *Sat*, and signifies in Pali, "wise," learned (Clough 28) *dachhina* is the Sans. *dakshiña*. The whole may be confidently rendered, "May this tend to the health and reward of all the learned."

Rajendra says the next clause, "has a long string of names of objects, most of which are unintelligible," and he offers no explanation of any part of it. I am reluctantly compelled to come to much the same conclusion; but some of the words are intelligible, and afford a clue to the drift of the passage. The first three words seem to be *avišana* Sans. *aveśana*, "passion, demoniac possession;" *rága*, "desire, lust;" and *parśa*, Sans. *sparśa*, "touch" "contact." The succeeding letters are *tasávabhavagaśo*. I cannot suggest any meaning for *taśa*, as the palatal *s* precludes us from assuming the word to be either *trishńá*, "thirst," or *trása*, "fear." The *ta* may possibly belong to the preceding word making *śparata* instead of *parśa*, and then the next word would be *śava*, Sans. *śáva*, a corpse. The succeeding word is in all probability *bháva*, state, condition of mind; but *gaśo*, the following one, is unintelligible. After this come the words *atra antara*, "hereupon." Some letters follow which are difficult to read with precision, and I am unable to discover any meaning until we get towards the end. The last words appear to read *arupanta sarvina puyae bhavatu*, "may it be to the honour of all incorporeal beings (emancipated spirits?)." So far then as this clause of the inscription is readable, it appears to begin with an aspiration for the removal of passion, lust, and ceremonial impurity, and to conclude with a desire that the work (of building the vihar) may be to the honour of all emancipated souls.

Rajendra's reading of the next clause is *Mahišachayyārhana satwasangena avashati ganasya parivara cha aga-bhaga parišaśana bhavatu*, "May it ensure control over good fortune to those who observe the autumnal fast *abasatha*, as also to their domestics and such pious congregations as are capable of noble conduct." My fellow-labourer must forgive me for saying that here he seems to have given the reins too freely to his imagination. I cannot acquiesce in the reading *satwasangena*, nor in the greater part of the translation. The first word is the same as that we have above read as *mahišacha;* the next is a name *Rohanasa;* the next is *dasa*, probably *dása*, "a slave," "servant." It is difficult to say what the next compound character is intended for, as we have no exact parallel to it. The body of it is *v*, so that it may be intended for *rv*, and be only a faulty execution or a variety of the character

which occurs at the beginning of this line in the plate. If so the word is probably *sarvina*, which compels us to suppose the letter *s* to have been omitted, and the phrase to read *dasa sarvina* instead of *dasarvina*. In offering this suggestion I may be making up for my own deficiencies, but I see no other way of getting through the difficulty. The following word is *avashatri* or *anvashatri*, which Rajendra takes to mean the *ávasatha* religious observance. I find no authority for considering the *ávasatha* to be a Buddhist institution, but even if it be, the orthography differs too materially from that of the word *anvashatri* to be taken as its original. The nearest equivalent appears to be *anveshtri*—"inquirer," "searcher." The next word is *ganasa*, "of the band or class;" those succeeding are *parivara cha*, "and the train," which is followed by *aga-bhaga parisásanam bhavatu*. The whole of it appears to signify, "May there be a perpetual happy future lot for all the servants of the Mahiśacha Rohana, and for his train of attendant students."

The last clause Rajendra reads *Mistugrasya cha agabhaga bhavatu*, "May it ensure good fortune to Mistugra." The only objection to this reading is to the rendering of the second character. The first part of this character is clearly the cerebral *ṭ*, and when we consider the few consonants that can be added to this letter, we shall have little hesitation in reading the compound as *ṭṭh*. The whole will then read *Miṭṭhagassa cha aga-bhaga bhavatu*, "May there be a (happy) future lot for *Miṭṭhaga*.

The last line written in larger characters is thus rendered by Rajendra *Esha viháru asansthánna mahásangígana patigaha*. "This vihára is the asylum of the houseless of the great congregation." The first two words are clearly *esha viharam*, the termination of the last word, however, seems to be erroneous, the accusative being employed as a nominative. The following word, which Rajendra reads *asansthánana*, presents some difficulties. The first two characters are pretty certainly *asan*, but the following is the palatal *rś*, and certainly cannot be taken as *sth*. But giving the compound its proper equivalents *rś* we get the impossible combination *asanrś*. To escape from this difficulty we can only suppose the compound to be *śr* instead of *rś*, which will give the word *asanśrana*, a word which has much the same meaning as Rajendra's *asansthánana;* but may possibly have also some peculiar sectarial signification, being connected as it is with the *Mahásanghis*, the great sectarians. *Parigraha* signifies "accepted;" it has also the meaning "belonging to" (Clough, 115). The passage may, therefore, be translated

"This *Vihara* belongs to the *asanśras* (or, 'to the houseless') of the great congregation."

PROPOSED TRANSLATION.

Year 51—Artemisius 15.—With this (votive urn?) of Vaga-marega, the son of Bhamagulya, there is deposited a relic of the Holy Śákya in the vihar of Vaga-mariga. May this meritorious foundation tend to (procure) a lasting future lot for Huveshka, the great king, king of kings: may it be to the honour of my father and mother: may it be to the honour of the brothers of me, Hashṭuna-marega: may it be to my purity: may it tend to the honour of relative and friend, and of (my) protectors: may this work tend to the lasting future lot of the Mahiśacha Vaga-maregas: may this tend to the health and reward of all the learned. (The next clause is not fully intelligible, but appears to begin with an aspiration for the removal of passion, lust, and ceremonial impurity, and to conclude with a desire that the work of building the vihar may be to the honour of all emancipated souls.) May there be a perpetual (happy) future lot for all the servants of the Mahiśacha Rohana and for his train of attendant students: may there be a happy future lot for Miṭṭhaga.

This Vihar belongs to the *Asanśras* (or "to the houseless") of the great congregation.

Before dismissing this inscription I may remark that there appears to have been an attempt at writing a portion of it in verse. The fourth line apparently concludes with a couplet of twelve syllables, and is preceded by a couplet of eleven.

Fig. 2 of plate x has been already examined in page 233, and the greater part of Fig. 3, comprising the date, has also been referred to. The words following the date are *Maharayasa Gushanasa raja.* "Of the great king Gushan." The substitution of *y* for *j* is a common one, as we have already seen in several instances. Here the word *Gushan* is apparently used as the name of a king not of a people.

These two last inscriptions were discovered and published by Colonel Cunningham, Beng. J., xxiii, 705. The first of them contains a few letters more than are given in the Plate; the second two lines more; but the dates, being the most important parts, were alone included in our plates. Nothing is known of these inscriptions beyond the fact of their having been found, the one at Ohind and the other near Panjtar, in the Yusafzai country. It is to be

regretted that so little is known about them. A description of the positions in which they were found, and some account of the perfection or imperfection of the stones and the inscriptions would be of service in any attempted translation.

Notes on the Alphabet.

The characters of the Taxila Plate are so clear and so well defined that a few notes upon them and upon the characters in fig. 8 of plate iv. will be useful for reference.

The letters *t*, *r*, and *v*, which have hitherto been frequently confounded, here appear in their true normal forms. The *t* is short in the stem, and curled at the point of the horizontal line. The *r* and *v* are longer in the stem than the *t*; the horizontal line of the *r* is curled like the *t*, but that of the *v* is perfectly straight. These are the true points of distinction, and ought never to be disregarded without strong reason. That variations do occur is certain, as we have seen in the Wardak inscription (page 256); but all the best specimens of writing mark the points of distinction above defined.

I have incidentally stated some of the reasons for the emendations in respect of the letters *ch* and *chh*; but the following general summary may be acceptable. The first form of the *ch*, of which two slightly varying specimens are given, has long been conclusively settled by the Kapur di Giri inscription and the coin legends. The second form, of which also there are two slightly different types, is well exemplified and decided by the Taxila Plate. The third form is used in the word *Chaitra* in fig. 2, plate x, and is employed for the copulative *cha* in the Manikyala Inscription. The fourth form is so used in the Wardak Inscription as to leave no doubt of its power. The earliest form of the *chh* is that of the Kapur di Giri edicts. The second form, found on Mr. Bayley's seal, departs slightly from this type by omitting the transverse line. The transition from this form to the third, by converting the angular to a semi-circular top, is easy and manifest. This letter has usually been read as *ch*, but is very clearly *chh* for reasons I have stated above (page 228), chief of which are its similarity to the earlier forms of the *chh*, and its being the constant representative of the Sanskrit *ksh*. The fourth form is found in the Wardak Inscription in line 8 of plate x, in the word *dachhina* for *dakshiṅa* (see page 262).

The two forms of the letter *y* are found in the word *puyae* in the Bimaran and Wardak Vase Inscriptions. This word is written with

the ordinary form of the *y* in the Taxila Inscription in precisely the same phrases, and there cannot be the slightest doubt of its being the same. The first form differs sufficiently from the *ś* to mark a difference in pronunciation, and the second is probably only a careless manner of writing.

The additional form of the *Kh* is found in the Wardak Inscription, line 2, and in the word *Khushan* of the coin legends (plate iv, fig. 7 *b*).

The reasons for reading the character *ṭhi* are given in page 239, where it is shown to occur in the word *ṭhira* for the Sanskrit *sthira*.

There can be no doubt as to the character *mu*, which is found so distinctly in the word *Śákyamuni* in the Taxila plate. The second form, however, is not quite so certain, but still there is little room for doubt. It resembles the certain form of the *mu* more than any other letter; it occurs in what seems to be a faulty spelling of the same name *Śakyamuni* in the Wardak Inscription; and wherever it occurs the sound *mu* appears to be suitable (see pp. 242, 253, 259).

The variety of the letter *s*, which has been read *si*, occurs twice on the Taxila plate in the word *Chhatrapasi*, and it is difficult to see what else than the vowel *i* can be expressed by the curl of the point. The same twist appears to be added to the letter *t* at the end of line 2; but this is not quite certain as the plate is much decayed in this spot.

khs—See line 2 of Taxila Plate.

ṭṭ—See lines 1 and 3 of the Taxila Plate where it is the representative of the Sanskrit *shṭ* and *shṭh*. It also occurs in a short inscription published in the Beng. J. for 1862, page 178, where it greatly troubled Rajendra Lal, who finally read it as *jña*, and the word in which it is found as *prájña*. The word, however, is clearly *preṭṭa*, Sans. *preshṭa*, "dear."

phs—See coin legend. Plate iv, fig. 7 *b*.

bhr—The first form of this compound is found on the coins, and was so read by Colonel Cunningham (Ben. J. xxiii, p. 695). The second form is found in the word *bhrata* in the Taxila, Peshawar and Wardak Inscriptions.

rṭ, *rt*, *rdh*. &c. &c.—The conjunct form of the *r* preceding a consonant is found in two shapes That of the *rv* and *rdh* of the Taxila and Bimaran Inscriptions (plate iii), and that of the *rv* in the word *Sarva* in the coin legend (plate iv, fig. 7 *c*). This latter form is found combined with other consonants in the Manikyala and Wardak Inscriptions, and its power may be now considered settled.

The two forms of the *rm* differ from the ordinary way of pre-

fixing the *r*, Colonel Cunningham was the first to read this compound. The character *rmi*, which occurs in the Manikyala Inscription is doubtful.

św—This compound is found in the word *Iśwara* (plate iv, fig. 7 *c*); and I may here repeat what I have before stated in page 240, that conjunct consonants appear to be always joined to the right-hand limb of this letter and the letter *y*, while vowels are added to the left.

shk—The first form of this compound occurs in the name Kaneshka, line 3 of the Manikyala Inscription. The second form in the name Huvishka, Wardak Vase, line 4.

sht—See Wardak Vase, line 5.

st, *str*—The first form of the *st* was made known by Mr. Norris in his article on the Kapur di Giri Inscription. The second will be found in Mr. Thomas's Alphabet (Prinsep's Essays ii, p. 166). The form *str* occurs in the word read "*Strategasa*" by Colonel Cunningham.

sy—The two forms of this compound are found in lines 1, 2, and 6 of the Wardak Inscription. And it may be here stated that the first appears to be the common way of adding a conjunct *y*. See the words read as *Gulya* and *Śakya* in lines 2 and 3 of the same inscription.

pr, *tr*, *&c.*—The adjunct form of the *r* has long been well-known.

pan, *ram*, *&c.*—The form of the anuswara has also been long recognised, but a few examples are given from the Taxila Plate. The *mam* and *han* are worthy of attention.

I cannot conclude this paper without expressing my thanks to Mr. Thomas for many valuable hints and for references to books of authority not within my reach. The characteristic care and accuracy with which he has prepared the Taxila plate will be appreciated as much by my readers as by myself.

ART. X.—*On the Indian Embassies to Rome, from the Reign of Claudius to the Death of Justinian—continued from p. 298 of the XIXth Vol., Journ. R.A.S.* By O. DE B. PRIAULX, Esq.

[*Read 17th November*, 1862.]

AFTER the fall of Palmyra and the many disasters which about this time overwhelmed Alexandria, the far East ceased to occupy the Roman mind or much place in Roman literature. India and the name of Buddha are however to be met with in Christian controversial writings of the third and fourth centuries directed against the Manichæan heresy. They occur, in Archelaus' account of his disputation with the hæresiarch Manes held at Charra in Mesopotamia[1] (A.D. 275-9), in the Catacheses of Cyril of Jerusalem (A.D. 361), and in the Heresies of Epiphanius (A.D. 375), which all trace back the Manichæan doctrine to one Scythianus and his disciple Terebinthus, whom they connect with India in this wise. Scythianus, of Scythian descent, though by birth a Saracen of the Saracens of Palestine and thus familiar with the Greek language and literature,[2] was a contemporary of the Apostles, and a merchant engaged in the India trade. In the course of his business he had several times visited India; and while there, being a man of an inquiring mind and great natural parts,[3] had made himself acquainted with the Indian philosophy.[4] In his maturer years, having now amassed great wealth, while returning homeward through the Thebais, he fell in, at Hypsele,[5] with an Egyptian slave

[1] Vide Archelai et Manetis Disputatio: ed. Zacagnii, 1 p., 93-4 pp. This work, written originally in Syriac, I refer to, because it is Cyril's and Epiphanius's authority for their notices of Scythianus. Cyril says this heresy sprang up in the reign of Probus (A.D. 276-82), Catechesis, vi., 20.

[2] *απο της Σαρακηνης ὁρμωμενου κατα δε τα τερματα της Παλαιστηνης, τουτέστι εν τῃ Αρραβιᾳ, ανατραφεντος· ουτος Σκυθιανος εν τοις προειρημενοις τοποις παιδευθεις την Ἑλληνψν γλωσσαν ἠ την των γραμματων παιδειαν·* Epiphan. Ad. Hæres, L. II., 66, 1§, 618 p., I. v.

[3] "Valde dives ingenio et opibus, sicut hi qui sciebant eum per traditionem nobis quoque testificati sunt." Archelaus, ib.

[4] Epiphanius, who writes with theological bitterness throughout, alone alludes to his Indian acquirements, but makes him little better than an Indian juggler: *και γαρ ἠ γοης ην απο της των Ινδων ἠ Αιγυπτων και εθνομυθου σοφιας*, ib., 3§.

[5] *πλουτῳ πολλῳ επαρθεις ἠ κτημασιν ἠδυσματων ἠ τοις αλλοις τοις απο της Ινδιας, ἠ ελθων περι την Θηβαιδα εις Ὑψηλην.* Epiph., ib., 2 §.

girl, whom he bought and married, and who persuaded him to settle in Alexandria.[1] Here he applied himself to the study of and mastered the Egyptian learning,[2] and here formed those peculiar opinions which, with the assistance of his one disciple and slave Terebinthus, he embodied in four books,[3] the source of all Manichæan doctrine. Here, too, he heard of the Jewish Scriptures; and wishing to converse with the Jewish doctors,[4] he set forth with Terebinthus for Jerusalem, and in Jerusalem met, and in a scornful and self-willed spirit disputed, with the Apostles of Christ; and there, after a short time, died.[5] At his death, Terebinthus either inherited or seized upon his books and other wealth, and hurrying to Babylon, proclaimed himself learned in the wisdom of Egypt.[6] He also took the name of Buddha (Βουδδας, Buddas), and gave out that he was born of a virgin, and had been brought up on the mountains by an angel.[7] Some twenty years after the death of

[1] "Quæ eum suasit habitare in Ægypto magis quam in desertis." Archelaus, ib., and Cyril, C. vi. c xxii., την Αλεξανδρειαν οικησας, he thus locates him in Alexandria. Ib., 184 p., I. Reischl., ed.

[2] "In quâ provinciâ cum habitaret, Egyptiorum sapientiam didiscisset." Archelaus, ib.

[3] Epiphanius, 2 § ib. and Cyril assert that Scythianus wrote these books, Archelaus, on the other hand, that Terebinthus was their author. These books Mysteriorum, Capitulorum, Evangelium, (ου χριστου πραξεις περιεχουσαν, Cyril, ib.) et novissimum omnium Thesaurum appellavit." Archelaus, ib.

[4] Επειδη δε ακηκοει πως οι Προφηται ὑ νομος περι της του κοσμου συστασεως, &c. Epiphanius, ib. 3§: "Placuit Scythianσ discurrere in Judæam, ut ibi congrederetur cum omnibus quicunque ibi videbantur doctores." Archelaus, ib. Cyril merely mentions that he went to Judæa and polluted the country by his presence: ὑ λυμηνασθαι την χωραν, ib.

[5] Epiphanius will have it that he fell from the house-top and so died—the death also of Terebinthus. Archelaus merely says that arrived in Judea he died; and Cyril, that he died of a disease sent by the Lord. τον νοσῳ θανατωσας ὁ Κυριος, ib.

[6] Terebinthus dicens omni se sapientia Ægyptiorum repletum et vocari non jam Terebinthum seb alium Buddam nomine, sibique hoc nomen impositum, ex quâdam autem virgine natum se esse, simul et ab Angelo in montibus enutritum. Archelaus, 97 p. Epiphanius asserts that he took the name of Buddha, ινα μη καταφωρος γενηται, ib. Cyril, omitting the virgin birth, that he took it because he was known, and condemned in Judæa for his doctrine, ib. 23§. But Petrus Siculus, A.D. 790, and Photius, 890, give further details: Ὁ μεν Σκυθιανος ετολμηση Πατερα ἑαυτον ονομασαι· ὁ δε Βουδδας ὑιον του Θεου ὑ Πατρος, εκ παρθενου δε γεγενησθαι ὑ εν τοις ορεσιν ανατρεφεσθαι. Ὁθεν ὑ δωδεκα μαθητας ὁ αντχριστος της πλανης κηρυκας απεστειλεν. Reischl, note to Cyril, ib.

[7] Besides this Buddha, Terebinthus, there is a second Buddas, Baddas, or Addas, one of the twelve disciples of Manes, who preached his doctrine in Syria; and a third Bud or Buddas Periodeutes, who lived A.D. 570: "Christianorum in Persidi finitimisque Indiarum regionibus curam gerens. Sermonem Indicum coluisse dicitur, ex quo librum Calilagh et Damnagh (Kalilah va Dimna, de bonis

Epiphanius, Hieronymus (A.D. 420) incidentally notices the manner of Buddha's birth. Having enlarged on the honour in which virginity has been ever held, and how to preserve it some women have died; or how, to avenge its enforced loss, others have killed either themselves or their ravishers; he goes on to say, that among the Gymnosophists, there is a tradition, that Buddha, the founder of their philosophy, was born from the side of a virgin.[1]

Of these writers Hieronymus is the only one who directly refers to the Indian Buddha, and of ancient writers is the first who correctly narrates the manner of Buddha's birth; and yet his notice of him is by no means so full and satisfactory as that of Clemens, written some two centuries before. For Clemens described Buddha as a man and moral lawgiver, and as a man raised to deity by his own supreme majesty and the reverence of his followers; shortly indeed, but how truthfully and characteristically! when compared with Hieronymus, who knows him as the founder of the Gymnosophists, *i.e.*, of the Hindu philosophy, which is as much as if a Hindu should see in Mahomet the author of the Western religions.

Again, Hieronymus gives Buddha a virgin mother. But a virgin mother is unknown to the Buddhist books of India and Ceylon, and belongs—derived perhaps from some Chinese or Christian source—to the bastard creed of the Buddhists of Tartary.[2] Under any

moribus et apta conditione animi.—Geldemeister de Rebus Ind., 104 p.) Syriace reddidit." Asseman. Bib. Orientalis, III. 219, but as the work had been already translated into Persian by order of Ghardes (A.D. 531-579) "Syriacam versionem proxime post Persicam fecit Bud Periodentes." Asseman. ib., 222 p.

[1] "Contra Jovianum Epistolæ, Pt. I., Tr. II., c. 26: "Apud Gymnosophistas inde quasi per manus hujus opinionis traditur auctoritas, quod Buddam principem dogmatis eorum e latere suo virgo generavit."

[2] According to the Nepaulese "Neither Adi Buddha nor any of the Pancha Buddha Dhyani were ever conceived in mortal womb, nor had they father or mother, but *certain persons of mortal mould* have attained to such excellence as to have been gifted with divine wisdom and these were Sakya Sinha," Hodgson, Buddhist Rel., 68 p. And the Thibetan books from the Sanskrit, among the qualities required of the mother of Buddha place this one: "elle n'a pas encore enfanté," to which Foucaux appends this note: "Mais il n'est pas dit qu'elle sera vierge." Hist. de Bouddha, tr. de Foucaux. The Singhalese: "Our Vanquisher was the son of Suddhadana and Maya," Mahawanso, Turner, p. 9, Upham, 25 p. Indeed the Virgin mother seems strange to the Indian mind, vide Birth of Parasu-Rama, Maurice, Ant. Ind., II. 93, and of Chrishna, Harivansa, Lect. 59, Langlois. According to the Mongols "Soudadani epousa Maha-mai, qui, *quoique vierge*, conçut par l'influence divine un fils le 15 du dernier mois d'été," Klaproth, Mem. sur l'Asie, II, 61 p. Whether, however, the Tartars borrowed the idea from the Christians or it is original among them may be a question. For I find among the Mongols that

circumstances, this dogma of Tartar Buddhism[1] could scarcely have reached Hieronymus; and he here writes, it may be presumed, on the authority of Archelaus or Epiphanius, and confounds through ignorance the Manichæan with the Indian Buddha.

With regard to the Buddha of Archelaus, Cyril, and Epiphanius, when we remember the many points of at least superficial resemblance between Buddhism and Christianity, and the proselytising spirit of both religions, we may well wonder that so few of the early Christian fathers have known the name of Buddha; and that of these few, Archelaus and his copyists have so little appreciated its religious significance, that they speak of it merely as of a name assumed by Terebinthus, and so assumed, Epiphanius asserts, because it is the Assyrian equivalent of the Greek word Terebinthus.[2] They in fact connect the Manichæan heresy with India,[3] not through the name of Buddha, but through Scythianus and his Indian travels and familiarity with Indian learning.

But if the Indian Buddha was unknown to Archelaus, he certainly was not unknown to the disciple and successor of Scythianus, who took his name; probably, because it was symbolical of his own mission, and of himself as destined to inaugurate a new era in the history of mankind; and because by it he connected his own system of religion, which was eclectic and conciliatory, with the religions of the East. But, this notwithstanding, Manichæism, the Gnostic perhaps excepted, is that scheme of Christianity with which the Buddhist faith has the least affinity. For the Manichæan was an essentially speculative, metaphysical creed, or rather a philosophy from and to which a religion and morality were derived and attached, and of which Manes was but the author

Alankava, the ancestress of three great Tartar tribes, after a certain night vision, "se trouva fort surprise de cette apparition; mais elle le fut beaucoup plus, lorsq'elle appercut qu'elle était grosse sans qu'elle eut connu aucun homme." Alankava. Dict. Orient., D'Herbelot. And of the great Lao Tseu, who is somewhat anterior to Buddha, the Chinese believe that his mother conceived him impressed "de la vertu vivifiante du Ciel et de la Terre," Mailla, Hist. de la Chine, xiii., 571 p.

[1] Indeed I suspect that the Tartars were not at this time Buddhists, for of the Buddhist faith Klaproth writes, "qu'elle n'a commencé à se répandre au nord de l'Hindoustan que 60 A.D.; et beaucoup plus tard (the 7th century id., 88 p.), dans le Tubet et dans les autres contrées de l'Asie Centrale," U. S., 93 p.

[2] Τερηβινθου μετονομασθεντος Βουδδα κατα την Ασσυριων γλωσσαν, Epiph., ib.

[3] "Error quoque Indicus Manetem tenuit qui duo pugnantia Numina introduxit," Ephrem Syrus from Assemann, though as Assemann very justly observes the two hostile deities are evidence not of an Indian but a Zendian origin.

and expounder. Buddhism, on the other hand, spite of its real atheism and its Nirvana, is a religion eminently practical, formal, and ritual, of which Buddha is the great central sun, and his example, wisdom, and precepts, the world wherein his followers live, move, and have their being.[1]

The next incidental notice of India belonging to these times is to be found in Damascius' Life of Isidorus, preserved by Photius.[2] It is an account of some Brahmans who visited Alexandria, and lodged in the house of Severus, Consul A.D. 470. They lived, we are told, very reputably, after the manner of their people. They frequented neither the public baths nor any of the city sights, but kept within doors as much as they could. They ate palms and rice, and drank water. They were not mountain Brahmans, nor yet common Indian folk, but something between both, just agents for the Brahmans in the city, and for the city with the Brahmans. What they reported of the Brahmans quite tallied with all one reads about them: as that, by their prayers, they can bring down rain, and avert famine and pestilence, and other incurable ills.[3] They told also of the one-footed men, and the great seven-headed serpent, and other strange marvels.

I suspect that the prophetic and supernatural powers of the Brahmans were greater on the shores of the Mediterranean than on the banks of the Ganges. The one-footed men were a favourite Hindu myth, and known in Europe from the days of Ctesias. The seven-headed serpent may be referred either to that king of the Nagas, who with his seven folds covered the body of Buddha, and shielded him with his crests, or to the seven-headed serpent on which Vishnu reposes.[4] But whatever the tales of these men, the question arises,

[1] See, however, Lassen, Ind. Alterthumsk., III., 406 p., who finds traces of the influence of Buddhism in the religion of Manes. 1st. In the two opposite principles of Manichæism. 2nd. In its account of the world's origin. 3rd. In the laws which it supposes determine the several existences of individual souls in their progress towards final emancipation; and 4th. In its final destruction of the world. But without denying that these dogmas may have been borrowed from Buddhism, it must be allowed that they may just as probably be the result of independent thought applied to the great problems of which they are supposed to be the solution.

[2] Vide Photii Bib., ed. Schotti, 1042 p.: ηκον δε προς τον Σεβηρον ἡ Βραχμαναι κατα την Αλεξανδρειαν, και εδεξατο σφας οικιῳ ιδιῳ, etc. This visit must have taken place, therefore, before Severus took up his residence in Rome, and before his consulship.

[3] So Onesecritus: εφη δαυτους ἡ των περι φυσιν πολλα εξετασαι ἡ προσημασιων ομβρων, αυχμων, νοσων, Strabo, xv., I., 65, and Dio Crysostom, Oratio xlix.

[4] Hist. du Bouddha, Foucaux trans., 354 p. And compare Vishnu Purana,

why came they to Alexandria? They were not merchants, or they would have been found in its markets; and they travelled neither for their own instruction nor for that of others, or they would have mixed with the world, and not avoided the haunts of men. Whatever might be their object, they so lived that they could learn nothing, teach nothing.

Of direct notices of India subsequent to the fall of Palmyra, I find a short one in a Description of the Whole World, extant only in Latin translations, but originally written in Greek about A.D. 350, and seemingly by some eclectic in religion. In the farthest East, it places the Eden of Moses, and the sources of that great river, which, dividing itself into four branches, is severally known as the Geon, Phison, Tigris, and Euphrates. Here dwell—and we are referred to the authority of some unnamed historian[1]—the Carmani, a good and pious people, who know neither moral nor physical ill. They all live to the age of 120, and no father ever sees his children die.[2] They drink wild honey and pepper, and they eat a bread and use a fire both which daily come down from heaven; and the fire is so hot, that it would burn them up did they not run and hide themselves in the river until it returned to its own place. They wear garments of a stuff that scarcely ever soils, and then recovers all its freshness on being passed through fire. Next them, to the west, are the Brahmans. Like the Carmani, they are subject to no king, and live happily, sharing something of their neighbours' felicity. Their food is fruits, pepper, and honey. Then follow five other nations, and we arrive at the greater India, whence comes silk (or wheat), with all other necessaries, and the Indians live happily, and in a country large and fertile. Next to India Major is a land which is rich in everything. Its inhabitants are skilled in war and the arts, and aid the people of India Minor in their wars with the Persians. After these comes India Minor, subject to India Major; it has numberless herds of elephants, which are exported to Persia.

by Wilson, 205, where Ananta is described with a thousand heads, with the plate in Moor's Pantheon, representing Vishnu on the seven-headed "Ananta contemplating the creation, with Brahma on a lotos springing from his navel to perform it," Plate 7.

[1] "Et hæc quidem de prædictis gentibus historicus ait," Juretianus Geographicus, Descriptio totius Orbis, 218, 516 p, II., Geog. Græci. Minores.

[2] Their great age the Carmani share with others: "Cyrnos Indorum genus Isigonus annis 140 vivere. Item Ethiopas Macrobios et Seras existimat," Plin., Hist. Nat., vii., 2; Strabo, xv., 15. But their other blessings, that they die each in his turn and know no ills, are their own.

Though our author parades the authorities he has consulted from Moses and Berosus to Thucydides and Josephus, his work, which is rather a popular description of the world than a scientific geography, is interesting only when it treats of those countries and places, as Syria and its cities, with which he was himself acquainted. Of the far East his account is especially meagre, and would be worthless, but that it serves to show how necessary is commercial intercourse to keep alive our knowledge of other and distant countries; and how very soon after that intercourse had ceased, India again faded away into the land of myth and fable.

Some few years later (A.D. 360-70) and Avienus published a Latin hexametrical version of Dionysius Periegetes' Geographical Poem of the World. And though he nowhere shows any extraordinary regard for his text, and never stops at any alteration of it to suit his own taste or the views of his age, I observe that he scrupulously follows it in everything relating to India.

I will but mention Dracontius (died A.D. 450) and Avitus A.D. 490, who the one in his Carmen de Dec, speaks of India in connexion with spices—

> India tunc primum generans pigmenta per herbas
> Eduxit sub sole novo. i., 176.

and with precious stones and ivory—

> India cum gemmis et eburnea monstra minatur. 307

while the other, in his Poem de Mosai. Hist. Gestis, glorifies the Indians because they receive the first rays of the sun,[1] and describes them as black, and with their hair bound back off the forehead;[2] and who both—like the author of the Description of the Whole World quoted above—place India to the west of Eden, whence the rivers bring down all sorts of precious stones to us common mortals.[3]

[1] "Ubi solis abortu
Vicinos nascens aurora repercutit Indos," 196, l.
borrowed probably from Avienus "primam coquit hanc radiis sol," 1308, and Dionysius Periegetes, 1110.

[2] "Cæsaries incompta riget quæ crine supino
Stringitur ut refugo careat frons nuda capillo."

[3] "Est locus in terrâ diffundens quatuor amnes," Dracont, 178. The Ganges, one of these, brings down all sorts of precious stones.—So Eudoxus presents to Euergetes from India aromatics and precious stones: ὧν τους μεν καταφερουσιν οἱ ποταμοι μετα των ψηφων. Strabo, II. III., 81 p.

"Hic fons perspicuo resplendens gurgite surgit,
. . . .
Eductum leni fontis de vertice flumen
Quatuor in largos confestim scinditur amnes."—Avitus, I.

They add nothing to our knowledge of India, and merely illustrate the common-place axiom, that in an intellectually inferior age fables and myths were preferred to truth, and the most wonderful tales to the best ascertained facts.

To this age, the 5th century, also probably belongs Hierocles. Of his work, Philistores, but a very few fragments have been preserved; and of these two relate to India, and imply that India he had himself visited, and in India travelled. The first from Stephanos of Byzantium, under Brachmanes, is to this effect:—"After this I thought it worth my while to go and visit the Brahman caste.[1] The men are philosophers dear to the gods, and especially devoted to the sun. They abstain from all flesh meats, and live out in the open air, and honour truth. Their dress is made of the soft and skinlike (δερματωδη) fibres of stones, which they weave into a stuff that no fire burns, or water cleanses. When their clothes get soiled or dirty, they are thrown into a blazing fire, and come out quite white and bright." The second from the Chiliads of Tzetzes (VII. Hist., 144 to 716): "Then," he says, "I came to a country very dry and burnt up by the sun. And all about this desert I saw men naked and houseless, and of these some shaded their faces with their ears, and the rest of their bodies with their feet raised in the air. Of these men Strabo has a notice, as also of the no-heads, and ten-heads, and four-hands-and-feet men, but none of them did I ever see, quoth Hierocles."

Hierocles' account of the Brahmans is so modest, and his explanation of the one-footed men of Strabo so natural, that his narrative might easily be accepted as the genuine production of one who had visited India; but, first, for the asbestos stuff in which his Brahmans are clothed, and which we have no reason to believe they ever wore, but which, as it was an Indian manufacture,[2] and rare and valuable, he perhaps substituted for the wonderful earth-wool[3]

[1] εθνος, but having before us the opinions of his predecessors about the Brahmans, I suspect we should translate "nation."

[2] "Inventum jam est quod ignibus non absumeretur ardentesque in focis conviviorum ex eo *vidimus* mappas, sordibus exustis splendescentes igni magis quam possent aquis Nascitur in desertis adustisque Sole Indiæ, ubi non cadunt imbres inter diras serpentes; assuescitque vivere ardendo, rarum inventu, difficile textu propter brevitatem. Rufus color." Pliny. xix., 4. Strabo however speaks of it as a product of Eubœa, and in his time also used for napkins: εν δε τη Καρυστῳ ἡ ἡ λιθος φυεται ἡ ξαινομενη ἡ ὑφαινομενη ὡστε τα ὑφη χειρομακτρα γινεσθαι, ρυπωθεντα δὲις φλογα βαλλεσθαι ἡ αποκαθαιρεσθαι, x., I. B., p. 383.

[3] Ἡ δε ὑλη της εσθητος, εριον αυτοφυες ἡ γη φυει, λευκον μεν ωσπερ το Παμ-

Philostratus imagined for them; and, secondly, for the monsters he so carelessly attributes to Strabo—and of which, so far as I know, Strabo is innocent—had Hierocles but told of them as of something he had seen or heard of, these ten-headed and four-hand-and-footed men would have been identified with the statues of Ràvana and Ardhavan,[1] and adduced as an evidence of a visit to India. As it is, we know him as an untrustworthy writer, and we have only his own word for it that he was ever there.

We have next an account of India[2] written at the close of the fourth or beginning of the fifth century, and drawn up apparently at the request either of Palladius or of Lausius, to whom Palladius inscribed his Historia Lausiaca. Its writer states that he went to India with Moses, Bishop of Adule; but found the heat such, the coldest water being set boiling in a few minutes,[3] that he very quickly returned. He had little to say of his own knowledge; but in the course of his travels he had fallen in with, and heard a good deal about India from a scholar of the Thebaid, a lawyer, who, disgusted with his profession, had thrown it up, and set out to see the world, and more especially the land of the Brahmans. He recounted, that in the company of a priest he took ship in the Red Sea for the Bay of Adule. Here he landed and went to visit the city, and pushed on inland as far as Auxume,[4] where he met with some Indian,

'φυλων, μαλακωτερον δε τικτει, ἡ δε πιμελη ὁια ελαιον απ' αυτου λειβεται. Τουθ' ιεραν εσθητα ποιουνται, ἣ ει τις ετερος παρα τους Ινδους τουτους ανασπωη αυτο, ου μεθιεται ἡ γη του εριου. Philost., Apoll. Vita, III., xv., 54 p.

[1] Vide Plates 54 and 24, Moor's Hindoo Pantheon.

[2] Of this tract there are two versions, a Greek addressed to some eminent personage not named, and a Latin attributed to Ambrosius, and addressed to Palladius. In the Greek version the author himself visits India; in the Latin it is his brother, Musæus Dolenorum Episcopus, who traverses Serica, where are the trees that give out not leaves but very fine wool, and where he sees the stone columns raised to Alexander, and reaches at length Ariana, which he finds burnt up by the heat, and so hot that water is seen boiling in the vessels that hold it, and who then gives up his journey and returns to Europe. In this first part I have preferred the Greek, but I oftener follow the Latin version as the more full and intelligible.

[3] Ctesias of the Indian sea: *το δε ανω αυτης θερμον ειναι ὡστε μη ιχθυν ζηναι.* Photius Bib., 144 p. Strabo, of the heat in India says, lizards crossing the road are burnt up, and that water quickly warms, 730 p. This, however, may have been an extravagant mode of speech merely, for Sidonius, almost a cotemporary of Palladius, when urging his friend Donatius to leave the city, says "jam non solum calet unda sed coquitur." Epist. II., 2.

[4] I here follow neither the Greek nor Latin version. The Greek: *διαπλευσας μετα πρεσβυτερου ταυτην θαλασσαν κατελαβε πρωτον Αδουλιν ειτα την Αυξουμην εν ᾗ ην βασιλισκος των Ινδων*, vii. Pseudo-Callisthenes, Müller, 102 p. and

i.e. Arab, merchants about to proceed for India: he joined them, and together they crossed the Ocean. After several days' voyage they reached Muziris, the chief port on this side the Ganges, and the residence of a petty Indian rajah. At Muziris our traveller stayed some time, and occupied himself in studying the soil and climate of the place, and the customs and manners of its inhabitants. He also made inquiries about Ceylon, and the best mode of getting there; but did not care to undertake the voyage when he heard of the dangers of the Singhalese Channel, of the thousand isles, the Maniolai, which impede its navigation, and the load-stone rocks[1] which bring disaster and wreck on all iron-bound ships. They told him however of this island, of its happy climate,[2] and its long-lived inhabitants, of its four satrapies, and its great king,[3] of whom the petty sovereigns of the coast were but the governors. He knew, too, of its great trade, and its markets thronged with merchants from Ethiopia, Persia, and Auxume (Latin version only); of its five great navigable rivers,[4] and perpetual fruit-bearing trees, palms, cocoa, and smaller aromatic nuts. And he had heard how its sheep

afterwards Απο της Αυξουμης ευρων τινας πλοιαριῳ διαβαινοντας Ινδους εμποριας χαριν, επειραθην ενδοτερον απελθειν, viii., 103 p. The Latin: "In rubrio mari navim conscendens navigavit primo sinum Adulicum et Adulitarum oppidum vidit, mox Aromata promontorium et Troglodytarum emporium penetravit; hinc et Auxumitarum loca attigit, unde solvens Muzirim pervenit, ib. 103. The Greek version is evidently defective, for it never brings our scholar to India at all, while the Latin traces out an itinerary confused and improbable. For after leaving Adule our traveller makes for Aromata, the most eastern point of Africa, and the emporium of the Troglodytes; but—"Aduliton maximum hic emporium Troglod. etiam Ethiopum;" (Plin., iv., 34.)—or suppose it some port in the Aualitic Bay, still he is always retracing his steps till he comes to Auxume, an inland town (διεστηκεναι την Αδουλιν της Αυξουμεως πεντεκαιδεκα ἡμερων ὁδος: Nonnosus, 480 p., Hist. Bizant.), whence he sets sail for India.

[1] Ptolemy knows of the Maniolai and the loadstone rocks, but limits their number to ten, and throws them forward some degrees east of Ceylon, vii, 2, 21 p.; and before Ceylon places a group of 1378 small islands, vii., 4, 213 p. And Masudi, who had traversed this sea, says that on it iron nails were not applicable for ships, its waters so wasted them, 374 p.

[2] So Fa-hian: "Ce pays est tempéré, on n'y connait pas la différence de l'hiver et de l'été. Les herbes et les arbres sont toujours verdoyants. L'ensemencement des champs est suivant la volonté des gens." Tr. de Rémusat, c. xxxviii., 332 p.

[3] "Huic quatuor moderantur satrapes, inter quos unus est maximus cui cæteri obediunt." Latin version. These satrapies would be those of Jafna, Malaya, Rohuna, with that of Anarajapura as the chief.

[4] Ptolemy likewise gives five rivers to Ceylon, ut sup. The Soana, Ayanos, Baracos, Ganges, and Phasis, and after him Marcianus Heracleensis Geog. Minor, Didot, 584 p.

were covered, not with wool, but hair, gave much milk, and had broad tails; and how their skins were prettily worked up into stuffs, the only clothing of the inhabitants, who also on feast-days ate both mutton and goat's flesh, though commonly milk, rice, and fruit only.

And the scholar further said: "I tried to penetrate into the interior of their country, and got as far as the Besadæ, a people with large heads and long untrimmed hair, dwarfish and feeble, but active and good climbers, and who occupy themselves with gathering the pepper from the low and stunted trees on which it grows. They seized on me; and their king, the consumption of whose palace was one measure of corn a year (*sic.*), whence got I know not, gave me as slave to a baker. With him I stayed six years, and in this time learned their language, and a good deal about the neighbouring nations. At length the great king of Ceylon[1] heard of me, and out of respect for the Roman name and fear of the Roman power, ordered me to be set free, and severely punished the petty rajah who had enslaved me."

Of the Brahmans, this scholar reported that they were not a society like our monks, but a race, born[2] Brahmans. They lived, he said, near the Ganges, and in a state of nature. They went naked,

[1] This tract is imperfect. The Greek version sends our traveller direct from Auxume into the interior of Africa, where he was not likely to hear anything about the Brahmins: the Latin, on the other hand, after saying every thing to dissuade him from the voyage to Ceylon, suddenly and without a hint that he had left Muziris, sets him down in the m dst of its angry and excited population. But it is rarely consistent with itself. for 1st. it describes Ceylon on hearsay as an island of the blest, "in quâ sunt illi quibus Beatorum nomen est," and seems to countenance that description, and yet the people our scholar falls among he found a weak, hideous, and inhospitable race. 2nd, It speaks of pepper as the chief produce of the island: "piper ibi nascitur in magnâque colligitur copiâ;" but though pepper certainly grows in Ceylon it is not and never has been among its staple productions (Ptolemy, viii., 212 p.) nor to gather it the occupation of its people. But from their name and description, Sir E. Tennent (Ceylon) has identified the Besadæ with the Singhalese Veddahs. Let me observe that the name is unknown to the Latin version and belongs to the Greek, which expressly states that our scholar never went to Ceylon: *ου γαρ δεδυνηται ουδ' αυτος εις την νησον εισελθειν*, liv., III., vii., ib, and appears there in several shapes as Thebaids, Bethsiads, and Bethsads. 2ndly, that the Besadæ are in Ptolemy a people living in the extreme North of India. 3rdly, that the Besaidæ, except in those great features common to ill-fed barbarous races, bear no resemblance to any Singhalese people. For though, like the Veddahs they are puny. ill-shaped. live in caves, and recognize a domestic chief, the Veddahs, unlike them, have no king living in a palace, no political existence, and no arts such as the existence of a baker implies.

[2] Vide from Bardesanes, Jour. Rl. As. Soc., xix. 280 p.

wandering in the woods, and sleeping on leaves. They had no domestic animals, tilled no land, and were without iron, or house, or fire, or bread, or wine; but then they breathed a pleasant, healthful air, wonderfully clear. They worshipped God, and had no slight, though not a thorough, knowledge of the ways of Providence. They prayed always, turning but not superstitiously to the East. They ate whatever came to hand, nuts and wild herbs; and drank water. Their wives, located on the other side of the Ganges, they visited during July and August,[1] their coldest months, and remained with them forty days.[2] But as soon as the wife had borne her husband two children, or after five years if she were barren, the Brahman ceased to have intercourse with her.[3]

The Ganges is infested with the Odonto, a fearful monster, but which disappears during the Brahman pairing months; and by serpents seventy cubits long. The ants are in these parts a palm, and the scorpions a cubit, in length; and hence the difficulty of getting there. The tract then concludes with a series of letters, which purport to have passed between Dandamis, the chief of the Brahmans, and Alexander the Great, and which might have been written anywhere, and by anybody, except one who had learned to think or was accustomed to command.*

[1] "In India December, January, and February are their warmest months; our summer being their winter; July and August are their winter." Masoudi's Meadows of Gold, 344 p.

[2] Among the Buddhists: "Quand venait la saison des pluies les Religieux pouvaient cesser la vie vagabonde des mendiants. Il leur était permis de se retirer dans des demeures fixes. Cela s'appelait séjourner pendant la Varcha: c'est-à-dire, pendant les quatre mois que dure la saison pluvieuse." Burnouf, Hist. du Boud., 285 p. The rainy season, however, is not the same on the East and West of the Ghauts.

[3] Suidas, s. v. Βραχμανες, has, with a slight alteration, copied this account of the Brahmans. He says "they are a most pious people (εθνος), without possessions, and living in an island of the ocean given them by God; that Alexander came there and erected a pillar (the bronze pillar of Philostratus, As. Jour., xviii., 83 p.) with the inscription 'I the great king Alexander came thus far;' that the Makrobioi live here to 150, the air is so pure The men thus dwell in the parts adjoining the ocean, but the women beyond the Ganges, to whom they pass over in the months of July, &c." The island of the Indian Makrobioi is probably borrowed from the Atlantic Erythia, where dwelt the Ethiopian Makrobioi according to Eustatius. Com. in Dion. Per., 558§, 325 p., II., Geog. Min.

ητοι μεν ναιουσι βοοτροφον αμφ' Ερυθειαν
.
Μακροβιων υιηες αμυμονες, οι ποθ' ικοντο
Γηρυονος μετα ποτμον αγηνορος. Diony. Perieget., 558, &c., ib.

* Of cotemporaries of Palladius, who in their works have noticed India, I pass over Marcianus Heracleensis (A.D. 401), who as a geographer had necessarily much

Our author's account of his own experience of India, its great heat, is so absurdly impossible, that we lose all faith in his veracity. I believe neither in his own story, nor in that of his travelled lawyer, who seems to me introduced merely to give reality and interest to the narrative. In the narrative itself we first hear of the loadstone rocks, though still attached to the Maniolai, as guarding the coasts of Ceylon. These rocks, which the voyages of Sinbad have since made so famous, probably owed their origin to some Arab merchant, some Scythianus, who thus amused the imaginations of his wondering customers, and at the same time fenced round with terror the trading grounds whence he obtained his most precious wares. Here, too, we read of a Singhalese Empire, with dominions extending far into the interior of India, and here only; for the Singhalese annals show us Ceylon ever open to Tamil inroads, sometimes subdued, or at best struggling for independence, and at other time prosperous and powerful, but never even then claiming rule over any part of India.[1] And here, also, we have an account of the Brahman marriage, which, though in one particular, divorce for barrenness, not altogether incorrect, is, as a whole, quite opposed as well to all we know of Brahman habits, as to that ideal of Brahman life on which the Laws of Menu so willingly dwell.[2]

to say about it, but who as the mere copyist of Ptolemy principally, and occasionally of other writers (Geog. Græc., Min. Pf., 133 p., I. ed. Didot, conf. Lassen, u. s., 288, III.), added nothing to the existing knowledge of India: and Justin, Hist. Philip. (Smith's Biog. Dict., s. v., and de Ætat. Justini and Testimenta, Valpy's Delphin ed.), to whom we are indebted for much of the little we know of the Greek rule in Bactria and India, but whose history, as an epitome of that of Trogus Pompeius, belongs really to the Augustan age.

[1] This tract was written about A.D. 400. If the scholar ever existed, he must have travelled and obtained his knowledge of Ceylon some time in the last half of the fourth century, during the reigns of either Buddha Da'sa, from 339 to 368 A.D., or of Upatissa II., A.D. 368-410. From the Mahawanso, 237-9 pp., and the Rajavali, 241-2 pp., we gather, that Ceylon was at this time in a flourishing condition, but nothing which can lead us to suppose that its kings held dominion in India. Fa-hian also was in Ceylon about A.D. 410, and his description of the island quite corroborates the statements of its Sacred Books. Fae-kour-ki, xxxviii., 9. Upham's Sacred Books of Ceylon, l. c., and Turnour's Appendix to the Mahawanso, 72 p.

[2] For the marriage duties and the respect due to women, v. Menu III., 45-8 and 55-62. For the marriage duties of women, ib. 153, 160, and ix. 74. The ideal of marriage: "Then only is a man perfect when he consists of three persons united, his wife, himself, and his son, and thus learned Brahmins have announced this maxim—The husband is even one person with his wife," ib. 45. Consequent upon this "A barren wife may be superseded by another in the 9th year, she whose children are all dead in the 10th, she who brings forth only daughters in the 11th," ib. 81.

About this same time (A.D. 360-420), appeared the Dionysiacs, a poem in 48 books, written by Nonnos, of Panoplis in Egypt, to celebrate the triumphs of Bacchus, and his conquest of India. The first eight books tell of Cadmus, and the loves of Jupiter, and the jealousy of Juno. The 9th, 10th, 11th, and 12th recount the birth and education of Bacchus, and his love for, and grief at the death of, the youthful satyr Ampelos;[1] and how Ampelos was then changed into a vine, and how of the grapes Bacchus made wine, and drank it, and threw off his old sorrow.[2] In the 13th book Iris[3] from Jove calls on Bacchus to drive the lawless Indians from Asia, and by great deeds and labours to gain a place in Olympus. It then enumerates the Centaurs, Satyrs, Cyclops, and peoples which gather round the Bacchic standard. In the 14th and 15th books Bacchus is in Bithynia, near the lake Astracis,[4] and he then and there changes its waters into wine, encounters and makes drunk and captive an Indian army under Astrais (*αστηρ*); and afterwards, 17th book, marches into Syria and defeats another and more powerful one, commanded by the son-in-law of Deriades[5] the Indian king,

[1] Ουδε ἐ καλλος ελειπε, ἠ ει θανεν· ὡς Σατυρος δε
κειτο νεκυς, γελοωντι πανεικελος, ὁιαπερ αιει
χειλεσιν αφθογγοισι χεων μελιηδυν αοιδην. xi., 250.

[2] προτερας δ' ερριψε μεριμνας
φαρμακον ἡβητηρος εχων ενοδμον οπωρην. 290, xii.

[3] He sends Iris to bid him—

οφρα δικης αδιδακτον ὑπερφιαλων γενος Ινδων
Ασιδος εξ-λασειεν. 5, xiii.

But unlike the Iris of Homer, who always strictly delivers her message, she somewhat varies it, and bids him—

ευσεβιης αδιδακτον αιστωσαι γενος Ινδων.

[4] ὁ περι Νικομαδειαν κολπος Ασταχηος καλειται. Strabo, xii., 43. Nonnos, ed. de Marcellus, N. N., 100, xiv., 7, xv.

[5] Δηριάδης, from ὁηρις, strife, says Nonnos. The name is probably borrowed from the Bassarics of Dionysius, for Eustatius in his Comm. on the Periegesis (606 v., 332 p., II., Geog. Græ. Min.) observes that the Erythræan king was Deriades, an Erythræan τῳ γενει, but who went to India and bravely opposed Bacchus. And then if Dionysius, as Müller is inclined to think, lived in the first century, it may possibly be either a translation or adaptation of the Sanskrit Duryodhana, from "dur," bad, and "yodha," strife, as Professor Wilson, in a paper on the Dionysiacs of Nonnos, As. Res., xvii., suggests, and may have become known in Greece through the Greeks who had visited India, or the Hindus who visited Alexandria. Or as Duryodhana is the oldest of the Kaurava princes and one of the heroes of the Mahabharata, his name and some notion of the Epic may (spite of Strabo's hint to the contrary, L. xv., 2) have been transmitted to Greece by the Bactrian Greeks, whose relations with India were many and intimate. But in this case one name only in that poem, and not the greatest nor the easiest fitted to Grecian lips, has, though all disfigured, found a place in Grecian literature.

Orontes,[1] who in despair kills himself, and gives his name to the neighbouring river, ever since called the Orontes. After this battle, Blemmys, king of the Erythræan Indians, and subject to Deriades, submits to Bacchus, and settles with his people in Ethiopia.[2] The 18th book shows us Staphylos, the Assyrian monarch, with Methe and Botrus, his wife and son, doing honour to and feasting Bacchus in their palace, whence, after a drunken bout, Bacchus goes on his way Indiaward, and at the same time despatches a herald to Deriades, threatening war, unless his gifts and orgies be accepted. The 19th book relates the death of Staphylos, and the games held in his honour. In the 20th, Bacchus reaches Arabia, but in the forest of Nyssa, all unguarded and defenceless, is set upon by Lycurgus, and takes refuge in the Red Sea. The 21st book tells of his ambassador's reception at the Indian court, and of the scorn with which Deriades rejects the proferred gift of Bacchus. "He cares for no son of Jove," he says, "his sword and his buckler are his wine and drink, and his gods earth and water."[3] Bacchus learns this answer while frolicking with the mountain nymphs.[4] He prepares for war, and calls on the Arab Rhadamanes to equip a fleet, and attack the Indians by sea. He himself, with his army, passes over the Caucasus.[5] In the 22nd book we have the first battle on Indian ground. Near the Hydaspes, in a thick forest, an Indian army

[1] Orontes, Greek form of the Persian Arvanda, from "arvat," flowing, Lassen, III., 147, or of the Egyptian Anrata. Rougé, tr. of a poem on the exploits of Rameses by Pentaour. Of this river, both Wilson, u. s., 610 p., and Lassen observe that in the belief of Syria, confirmed by the oracle of Klaros, it took its name from an Indian chief who died there, and whose coffin and bones, indicating a height of 11 cubits, were found when the Romans diverted or canalized the river. Pausanias, viii., 2, 3, and see Strabo, xvi. II. 7, 639 p.

[2] Eustatius, u. s., either on the authority of Nonnos or the Bassarics, gives them the same origin: Βλεμμυες ὑυτω καλουμενοι απο Βλεμμυος τινος, ὁς ὑποστρατηγων τῳ βασαλει Δηριαδῃ κατα Διονυσου συνεπολεμεσε. (Com. 220 v., 255 p., ib.)

[3] Δηριαδης γαρ
ου μαθεν ουρανιων μακαρων χορον, ουδε γεραιρει
Ηελιον και Ζηνα
.
οινος εμος πελεν εγχος· ὁ δάυ ποτος εστι βοειη. 256.
.
μουνοι εμε γεγαασι θεοι ἠ Γαια ἠ Ὑδωρ. 261, xxi.

[4] ορειασι μιγνυτο Νυμφαις. 277, xxi.

[5] The passage scarce occupies three lines—
και ταχυς ηλασε δίφρον Εωιον εις κλιμα γαιης
. αμφι δε πετρην
Καυκασιην λοφοεντα διαστειχων κενωνα . . .
Ἠωης παραμειβε πεζαν. 307, xxi.

under Thoreus lies in ambush, but is betrayed to Bacchus, who by a pretended flight draws them out into the open and completely routs them, and then crosses the river to combat with Deriades. Deriades, by the advice of Thoreus, retreats on his elephants within the city walls. Attis, on the part of Rhea, presents Bacchus with arms forged by Vulcan, and foretels that not till the seventh year shall he destroy the Indian capital.[1] In the meanwhile Deriades, at the treacherous instigation of Minerva, marshals his hosts, and the 26th book gives the names of the cities, islands, and peoples, with their chiefs, which form his army. And on the contents of this book, as specially occupied with India, we shall dwell at some length. At the summons of Deriades came Agraios (*αγρα*, the chase), and Phlegios (*φλεγω*, to burn), the two sons of Eulæus (river, Ulaï, ? Marcellus), and with them those who dwell in Kusa[2] and Bagia, near the broad muddy waters of the Indian Zorambos; the people, too, of the well-turretted Rhodoe, the craggy Propanisos, and the isle Gerion,[3] where not the mothers, but the fathers, suckle their children. There, too, were found the inhabitants of the lofty Sesindos and of Gazos,[4] girt about with impregnable linen-woven bulwarks. Near them were ranged the brave Dardæ,[5] and the Prasian force, with the gold-covered tribes of the Sarangi, who live on vegetables, and grind them down instead of corn. Then came the curly-haired Zabians with their wise ruler Stassanor; then Morrheus[6] and his father Didnasos, eager to avenge the death of

[1] *ου γαρ πριν πολεμου τελος εσσεται, εισοκε χαρμης*
ἑκτον αναπλησωσιν ετος τετραζυγες Ὧραι.
.
εσσομενῳ δε
ἑβδοματῳ λυκαβαντι διαρραισεις πολιν Ινδων. 363-7, xxv.

[2] Those who would identify the different places in the text I refer to M. de Marcellus' notes to the 26th Book of his edition of Nonnos. They will at the same time see how he has accommodated, and I think not unfairly, the names to the Geographies of Ptolemy, &c.

[3] *Γηρειαν, Ροδοην τε και οἱ λειποτειχεα Γαζον.* Stephan, Byzant., s. v. *Γαζος* from the 3rd Book of the Bassariks of Dionysius.

[4] This description of Gazos is borrowed from the *Βασσαρικα* of Dionysius (n. 12, xxvi. B. de Marcellus), and from the same source he probably took his account of Gereion and the Sarangii, for Nonnos is of those poets who repeat but do not invent. Stephanos Byzantinus by the way, always quotes Dionysius Periegetes as a historical authority, e.g., s. v. *Βρεμυες* and *Γαζος*.

[5] *Δαρδαι Ινδικον εθνος ὑπο Δηριαδῃ πολεμησαν Διονυσῳ, ως Διονυσιος εν γ' Βασσαρικων*, Steph., s. v. *Δαρδας*.

[6] Lassen, u. s., derives Morrheus from *μορρεα*, the material of the vasa murrhina. Prof. W. H. Wilson, ib., suggests Maha, rajah. Neither derivation seems

Orontes. Now followed the many-languaged Indians from well-built sunny Æthra, and they who hold the jungles (λασιωνα) of Asene and the reedy Andonides, the burning Nicæa, the calm Malana, and the water-girt plains of Patalene. Next them marched the serried ranks (πυκιναι) of the Dosareans, and the hairy-breasted Sabaroi, and near them the Ouatecetoi,* who sleep lying on their long ears, with their chiefs Phringos, Aspetos, Tanyclos, Hippouros, and Egretios. Tectaphus also was there at the head of his Bolingians,[1] Tectaphus, whom, when in prison, his daughter suckled and saved from death. From the earth's extremity, Giglon, Thoureus, and Hippalmas brought up the Arachotes and the Drangiai, who cover with dust[2] those whom the sword has slain. Habraatos led on the archers. Shamed by the loss of his hair, a disgrace among the Indians, which had been cut off by order of Deriades, he came on slowly and perforce, with hate in his heart. He commanded the savage Scyths, the brave Ariainoi, the Zoaroi, the Arenoi, the Caspeiri,[3] the Arbians of the Hysparos, and the Arsanians whose women are wondrously skilled in weaving. Near them were ranged the Cirradioi, used to naval warfare but in boats of skins. Their chiefs were Thyamis and Olkaros, sons of Tharseros the rower. Under Phylites, son of Hipparios, came a swarm of men from Arizanteia, where a certain bushy tree from its green leaves distils sweet honey,[4] while from its branches the Horion[5] pours forth a song like the swan's for melody,

to me satisfactory,—the first strange and far-fetched, the second scarcely applicable, for Morrheus is no rajah, a soldier of fortune merely, though of high birth, an autocthon: ηλιβατου Τυφωνος εχων αυτοχθονα φυλην. 177, xxxiv.

* So Scylax. Tzetzes Chil., vii. Hist., 144, 635 l.

[1] Και τοτε Βωλιγγησι μετ' ανδρασι Τεκταφος ωρτο. Bassar., Dionys., Stephanos Byz., s. v., Βωλιγγα.

[2] "The Dandis and Dasnamis Sectaries of Siva put their dead into coffins and bury them, or commit them to some sacred stream." H. H. Wilson, Religious Sects of the Hindus, As. Res., xvii., 176: and in a note: "In the South the ascetic followers of Siva and Vishnu bury their dead (Dubois), so do the Vaishnava (Varangis?), and Sanyasis in the North of India" (see Ward), all the castes in the South that wear the Lingam, ib.

[3] εν δε τε Κασπειροι ποσι κλειτοι, εν δ' Αριηνοι. Stephanos, s. v., Κασπειρος, from the Bassar. Dionys.

[4] Εστι δε και δενδρα παρ' αυτοις μελι ποιουντα ανευ ζωων. Strabo, xv., I., 20, Geog. Min. Græc., 620 p., ii.

[5] Clitarchus, quoted by Strabo, speaking of the movable aviaries belonging to the Indian kings, says that they are filled with large leaved trees, on the branches of which are perched all sorts of tame birds, and that of these the finest songster is the horion, the most beautiful the catreus: ὡν ευφωνοτατον μεν . . . τον ωριωνα, λαμπροτατον δε κατα οψιν και πλειστην εχοντα ποικιλιαν τον κατρεα, xv., I., 690 p.

and the yellow purple-winged Catreus utters its shrill cry, prophetic of rain. Then followed the Sibai, the people of Hydara, and the Carmanian hosts, with their leaders, Kolkaros and Astrais, the sons of Lôgos. The 300 isles at the mouths of the Indus sent their contingent under Ripsasos, a giant in stature (*εχων ινδαλμια Γιγαντων*, 248 v.) Aretos, too, with his five sons born deaf and dumb, obeyed the call of Deriades. With them were ranged the shield-bearing warriors of Pyle, Kôlalla and Goryandos: then, under Phylates marched on those who dwell in the woody Osthe, mother of elephants, and with them their neighbours from Euthydimeia, speaking another tongue. The Derbicei, the Ethiopians, the Sacæ, the Bactrians, and the Blemyes, also joined the army of Deriades.

The contest then begins. The Gods, as was their wont, take each his side. Jupiter, Apollo, Vulcan, and Minerva, declare for the Bassarids; Juno, with Mars, Ceres, and Neptune for Deriades and his Indians, and from no interested motives, for throughout Deriades stoutly disavows all allegiance to them. The fight is carried on with various fortune. Now, the Indians flee before Bacchus and his crew aided by the gods; and now, headed by Mars, Morrheus, and Deriades, or Deriades' wife and daughters, and befriended by the stratagems of Juno,[1] they drive him from the field. At length night intervenes (XXXVII.), and Greeks and Indians bury their dead: the Greeks with funeral piles and games, the Indians with tearless eyes, for for them death but frees the soul from earthly chains, and sends it back to its old starting point, to run afresh life's circle of change.[2]

Six years have now passed away, and Rhea has long ago announced that the 7th year and a naval battle shall put an end to the war. The Rhadamanes arrive with their ships. Deriades collects his fleet, and goes forth to meet them.[3] The fight is long and doubtful,

[1] Juno drives Bacchus mad. Eustatius in his Commentary on Dionysius 976 v., alludes to this madness, probably from the Bassarics: *Μαινεται Διονυσος Ηρας προνοια.* Geog. Min., II., 386 p. It is also mentioned by Pseudo Plutarchus, de Fluv. et Mont. Nom., Geog. Min. Græc., II., 663 p.

[2] *ομμασιν ακλαυτοισιν εταρχυσαντο θανοντας*
δια βιου βροτεου γαιηια δεσμα φυγοντας
ψυχης πεμπομενης οθεν ηλυθε, κυκλαδι σειρη
νυσσαν ες αρχαιην. xxxvii., 3 v.v.

[3] Deriades, xxxvi. B., speaks of the Rhadamanes as ship-builders:
εισαιω Ραδαμανας, οτι δρυτομιῳ τινι τεχνῃ
νηας ετεχνησαντο φυγοπτολεμῳ Διονυσῳ. 414 v.v.
but boasts of Indian skill on the sea:
. *Ινδοι γαρ εθημονες εισι κυδοιμου*
ειναλιου, και μαλλον αριστευουσι δαλασσῃ
η νθονι δηιοωντες. 465 v.v.

till at length the Cabeirian Eurymedon sends a fire ship into the midst of the Indians, and a general conflagration ensues. Deriades (XL B., 75) escapes, renews the contest on land, and engages in a single combat with Bacchus; but, affrighted by the presence of Minerva,[1] he flies towards the Hydaspes, and, struck by the thyrsus of Bacchus, falls and dies in the river. The city and India submit to the conqueror; and Bacchus, having raised a monument to those of his troops who have perished, distributes the spoils among the survivors, and then returns to Lydia. The remaining eight books tell of the loves, and wars, and vengeance of Bacchus, and the poem concludes with his apotheosis.[2]

Notwithstanding the probability that through the Bactrian Greeks some knowledge of the Hindu Epics may have reached Greece and our author, I am inclined to think that they were wholly unknown to him.

I. Because his poem speaks of an Indian Empire, and therefore presupposes Indian conquests, extending to the shores of the Mediterranean and Red Seas, while the Indian books show us the tide of Indian domination rolling ever South and East, and if Westward,[3] never passing the Indus.

II. Because, though the names of the Indian cities and peoples in the Dionysiacs, as edited by the Comte de Marcellus, pretty fairly correspond with those given by Ptolemy, Pliny, and Strabo, and are thus accounted for, the names of its Indian chiefs are, with but few exceptions, as Morrheus, Orontes, &c., purely Greek.

III. Because his Indian facts, manners, and customs are few, and are:

1st. Such as were, long before his time, well known to the Roman world; as when he tells of the tearless eyes with which the Indians bury their dead, and shows them worshipping earth, water, and the sun, and marshalling their elephants for war, and calling their Brahmans to counsel, or employing them as physicians.[4]

1 Αθηνη
δαιμονι βοτρυεντι παριστατο· δερκομενουδε
δειματι θεσπεσιῳ λυτο γουνατα Δηριαδης. XL., 74.

2 και θεος αμπελοεις, πατρωιον αιθεραβαινων
πατρι συν ευωδινι μιης εψαυσε τραπεζης,
και βροτεην μετα δαιτα, μετα προτερην χυσιν οινου
ουρανιον πιε νεκταρ αρειοτεροισι κυπελλοις
συνθρονος Απολλωνι, συνεστιος ὑιει Μαιης. XLVIII.

[3] But compare Gildemeister, Scrip. Arab. de Rebus Indicis, 2, 8, 9 p.

[4] And the Brahmans heal the wound with magic chaunt, just as in Homer, when Morrheus is wounded:

Θφρα μεν ενθεον ἑλκος, ὁ μιν λαχε, δαιμονιη χειρ

2ndly. Such as were not so well known, but for which authority may be found in the Indian books: as when Deriades, by depriving Habraatos of his hair, disgraces him—thus Vasichta punishes the Sacas by cutting off the half of their hair, and the Yavanas by shaving their heads:[1] and chooses two soldiers of fortune[2] for his sons-in-law—thus their fathers give Sita and Draupati, the one to the strongest, the other to the most skilful, bowman: and as when Morrheus neglects and deserts his wife, daughter of Deriades, for a Bacchante—and thus the Hindu Theatre[3] affords more than one example of kings and Brahmans in love with women other than their wives, as in the Toy-cart, the Necklace, the Statue,[4] &c. But, however warranted by Indian custom, these several acts, as presented by Nonnos, scarcely associate themselves with Hindu life, certainly not more than the name of Deriades with that of Duryodhana, though they sufficiently remind us of the Greeks of the Lower Empire.[5]

3rdly. Such as are unsupported by Hindu authority. Thus Deriades shows himself skilled in the niceties of Greek mythology, and his wife and daughter, Bacchanal-like, rush to the battle;[6] and as if India were deficient in wonders, the fathers in Gereion suckle their children, and Gazos is impregnable with its cotton bulwarks.

> *λυσιπονου Βραχμηνος ακεσσατο Φοιβαδι τεχνῃ,*
> *θεσπεσιῳ μαγον ὑμνον ὑποτρυζοντος αοιδῃ.* XXXIX., 369.

[1] Harivansa, I., 68 p. Langlois, tr., Or. Tr. Fund; and Wilson, Hindu Theatre, 332, II.

[2] Of Morrheus—

> *νυμφιος ακτημων, αρετῃ δ'εκτησατο νυμφην.* xxxiv., 163.

And when he married his daughters, all gifts

> *Δηριαδης απεειπε· κ̓ῃ εγρεμοθοισι μαχηταις*
> *Θυγατερων εζευξεν αδωροδοκους ὑμεναιους.* ib., 169, 170.

[3] Wilson's Hindu Theatre, 326 and 364 pp., II.

[4] See the several plays in Wilson's Hindu Theatre, and some observations of Wilson's on the plurality of wives among the Hindus, II., 359.

[5] I do not, however, know that this inappreciation of Indian life is an evidence of Nonnos's ignorance of the Hindu books, but of his want of imagination. With some play of fancy and the faculty of verse, Nonnos is essentially without the poet's power. His personages are all conventional, and I suspect that no knowledge of India, not even had he trudged through it on foot, would have made them more Indian, more real, and more lifelike.

[6] In the Hanuman Nataka, nevertheless, the wife of Ravana, to animate his drooping courage, offers

> "If you command. By your side I march
> Fearless to fight, for I too am a Kshetrya." Hind. Theat., II., 371 p.

The Topographia Christiana (A.D. 535) next claims our attention. Its author, Cosmas, who had been a merchant, and who as a merchant had travelled over the greater part of the then known world, betook himself in his latter years to a monastery, and there, though weak of sight and ailing in body, and not regularly educated,[1] set himself in this work to prove, that our world was no sphere, but a solid plane.[2] He describes it, and illustrates this and indeed all his descriptions by drawings,[3] as a parallelogram lying lengthways east and west, and sloping up very gradually from its base, but more gradually on its south and west, than on its north and east sides, into a huge conical mountain, round which sun and moon run their courses, and bring with them day and night.[4] All about this great mass of earth[5] he places an impassable ocean, communicating with it by four gulfs, the Mediterranean, Arabic, Persian, and Caspian Seas,[6] but eternally separating it from a transoceanic land, where was and is Eden, the happy birthplace of our race, and whence rise sheer up those mighty walls which arch themselves into the firmament above us. Written with such a theme, enforced by many quotations from Scripture misunderstood, and the authority of fathers and philosophers, worthless on this point, the Topographia Christiana is but dull reading, and would long since have been forgotten, had it not here and there been lighted up by some sketch of Cosmas's own travels, some notice of what had fallen either under his own observation or that of others trustworthy and competent witnesses, and always told with a simplicity and guarded truthfulness which place him in the first rank of those who know how to speak of what they have seen, and repeat what they have heard, just as seen and heard, without exaggeration and without ornament.

Cosmas had a personal knowledge of three of the four inland seas—the Caspian[7] he had not visited. As an occasional resident

[1] *αρθενων ἡμων τυγχανοντων τῳ τε σωματι, ταις τε οψεσι πιεζομενων —αλλως τε και της εξωθεν εγκυκλιου παιδιας λειπομενων ἠ ρητορικης τεχνης αμοιρουντων.* Lib. II., 124 p. Montfaucon, Nova Collectio Patrum.

[2] Vide Prolog., p. 114.

[3] Vide the Plates at the beginning of Montfaucon's Nova Collectio Patrum, Pl. I.

[4] Vide 133-4 pp., ib.

[5] The length he computes to be of 400 mansions of 30 miles each, its breadth of about 200, vide 138 p.

[6] Lib. iv., 188 p., and 186-7 pp., and 132 p.: *εισι δε εν ταυτῃ τῃ γῃ εισβαλλοντες εκ του Ωκεανου κολποι τεσσαρες· οὐτοι γαρ μονοι οἱ κολποι πλεονται· αδυνατου ὑπαρχοντος του Ωκεανου πλεεσθαι.* 132 p.

[7] *εμποριας γαρ χαριν επλευσα τους τρεις καλπους τουτους, τον τε κατα την*

at Alexandria (124 p.), he knew the Mediterranean well. He had sailed down the Red Sea from Œla and Alexandria to Adule;[1] he had passed the Straits of Bab-el-Mandeb, and had been within sight of, though he did not land at, the Island of Socotora;[2] and thence, if he ever visited India, had stretched across the main to Ceylon and the Malabar Coast, or, coasting and trading along the eastern shores of Arabia, had made for the Persian Gulf and the emporia of the Indus. Once, too, the ship in which he sailed was on the very verge of the great ocean, and then the flocks of birds hovering about, the thick mists, and the swell of meeting currents[3] warned sailors and passengers of their danger, and their remonstrances induced the pilot to change his course.[4] On the continent he had crossed the Desert of Sinai on foot;[5] he was well known at Adule;[6] he had visited Auxume;[7] and indeed had travelled over the greater part of Egypt and Ethiopia and the countries bordering on the

Ρωμανιαν ἡ απο των οικουντων δε η και πλεοντων τους τοπους ακριβως μημαθηκως, 132 p.

[1] Adule *ενθα ἡ την εμποριαν ποιουμεθα οἱον απο Αλεξανδρειας ἡ απο Ελα εμπορευομενοι*, 140 p.

[2] Dioscorides *ἡν νησον παρεπλευσαμεν ου κατηλθονδε εν αυτῃ*, 179 p.

[3] Masoudi, in his Meadows of Gold, says of the sea of Zanj "I have often been at sea, as in the Chinese Sea, the Caspian, the Red Sea. I have encountered many perils, but I have found the sea of Zanj the most dangerous of all." 263 p. See also from Albyrouny, by Reinaud, Journal Asiatique, Sept.–Oct., 1844, 237-8 pp. But as indicative of the superior experience and enterprise of his age, compare with Cosmas the description of the same sea by the author of the Periplus; he points out its dangers at certain seasons because open to the south wind; and also how the danger may be foreseen by the turbid colour of the sea, and how all then make for the shelter of the great promontory Tabor, 12§, I., 266 p., Geog. Min. Græc.

[4] *Εν οἱς ποτε πλευσαντες επι την εσωτεραν Ινδιαν (εν τῃ Ταβροπανῃ, εν τῃ εσωτερᾳ Ινδια ενθα το Ινδικον πελαγος εστι*, 178 p.), *και ὑπερβαντες μικρῳ προς την Βαρβαριαν· ενθα περαιτερω το Ζιγγιον τυγχανει· ὁυτω γαρ καλουσι το στομα του Ωκεανου· εκει εθεωρουν μεν εις τα δεξια, εισερχομενων ημων, πληθος πετεινων ἁ καλουσι σουσφα ὡστε δειλιαν παντας, και ελεγον τῳ κυβερνητῃ, απωσε την ναυν επι τα αριστερα εις τον κολπον*, 132-3 pp. And *Βαρβαρια κυκλουται ὑπο του Ωκεανου εκ δεξιων*, 137 p. And *απω της Αξωμεως εὡς ακρων της Διβανωτοφορου νης της καλουμενης Βαρβαριας, ἡτις και παρακειται τῳ Ωκεανῳ*, 138 p. The recommendation to the steersman would, therefore, it seems have driven them further out to sea, unless we suppose that they were just doubling the promontorium Aromata, when it would bring them nearer to the Arabian coast.

[5] *Ὡς αυτος εγω πεζουσας τους τοπους μαρτυρω*. Of the desert of Sinaï, 205 p.

[6] Here Elesboas commissioned him to copy the inscription on the throne of Ptolemy, 141 p.

[7] *εξ ὡν τοις οφθαλμοις ἡμων εθεασαμεθα επι τα μερη Αξωμεως εν τῃ Αιθιοπια*, 264 p.

Arabian Gulf; and had moreover written an account of them which unfortunately has not come down to us.[1]

But Cosmas, a merchant and a traveller, mixed much with other merchants and travellers: and while his simple and genial nature won their confidence, his curious and enquiring mind drew from them all they had to tell of or had seen in other lands that was worthy of note. With their information he corrected or confirmed his own impressions and enlarged and completed his knowledge. In this way he first heard from Patricius of the dangers of the Zingian Ocean,[2] and in this way learned the adventures of Sopater; and in this way, by going among the slaves[3] of the merchants at Adule and questioning them about their people and country, he was able to speak to the correctness of the inscription on Ptolemy's chair.

As a merchant engaged in the Eastern trade, Cosmas was interested in and well acquainted with everything relating to it. He has accordingly noticed the principal ports at which it was carried on, together with the kinds of goods which each port specially supplied. He speaks of China, the country of silk, as lying to the left as you enter the Indian Sea in the furthest East and on the very borders of the habitable world, and yet not so far but that in its cities might occasionally be seen some Western merchant lured thither by the hope of gain.[4] Adjoining China[5] to the West was the clove region; then came Caber and next Marallo, famed, the one for its alabandenum, the other for its shells. With Marallo Ceylon seems to have been in communication, as it certainly was with the five pepper marts of Male, Pudopatana, Nalopatana and

[1] Vide Prologos II. I have noticed only those places which Cosmas positively states he had visited, but he insinuates a much wider range of travel. Thus measuring the earth's breadth from the Hyperborean lands to Sasus, he says there are but 200 mansions: *ακριβως γαρ επισταμενοι, ἠ ου πολυ διαμαρτανοντες της αληθειας, τα μεν πλευσαντες ἠ οδευσαντες τα δακριβως μεμαθηκως κατεγραψαμεν*, 144 p.

[2] *ταυτα δε παραλαβων εκ του θεεου ανδρου ητοι ἠ αυτης της πειρας εσημηνα*, 132 p.

[3] Captain Burton describes the trade at Zanzibar as in the hands of Arab merchants, who bring with them a train of native porters, some of them as many as 200.

[4] *αυτη δε ἡ χωρα του μεταξιου εστιν εν τῃ εσωτερᾳ παντων Ινδιᾳ κατα το αριστερον μερος εισιοντων του Ινδικου πελαγεος*, and a little before, *ει γαρ τινες δια μεταξην εις τα εσχατα της γης εμποριας οικτρας χαριν ουκ οκνουσι διελθειν*, 137 p.

[5] For this account of the countries and ports of the East trading with Ceylon, vide 337-8 pp.

Salopatana, Mangarouth[1] and Purti, and the other ports further Northward on the Western coast of the Indian Peninsula, as Sibor and Calliana[2] a place of great trade where ships might load with copper, sesamine wood, and clothing stuffs, Orrhotha[3] and Sindus, which last exported musk and androstachys. These Indian marts forwarded their wares to a great emporium situated on the southern coast of Ceylon, where they exchanged them for the silk, cloves, aloes, tsandana, and other merchandise which came from China and the countries lying eastward, or for Roman gold[4] and the manufactures of the West. In its ports[5] you might see ships freighted for, or coming from, Persia, Œthiopia, and every part of India, and in its markets you met with men of all nations, Indians, Persians, Homerites, and merchants of Adule. Answering to this great commercial city of the East was Adule in the West, situated some two miles inland[6] on the southern shore and at no great distance from the mouth of the Arabian Gulf. It was in direct and frequent communication with India. The merchants of Œla and Alexandria thronged to its markets; for there they found, besides the rich productions of the East, slaves, spices, emeralds,[7] and ivory, from Ethiopia and Barbaria.

Besides the sea route from China to the Persian Gulf, Cosmas speaks also of another and a shorter road[8] which led through Juvia,[9] India, and Bactria to the eastern confines of Persia, 150 stations, and thence through Nisibis, 80 stations, to Seleucia, 13 stations further on, and each station he computes at about 30 miles. That this road was much frequented may be gathered

[1] "Mangarat, urbs inter Malabaricas maxima regi gentili obediens." Geldemeister de rebus Indic., 184 p.

[2] Calliana: Lassen, Kaljanî; Hippoeura on the mainland, somewhat to the north-west of Bombay.

[3] Orrhotha, Soratha, Surat.

[4] To the universal use of Roman gold Cosmas testifies: *εν τῳ νομισματι αυτων (Ρωμαιων) εμπορευονται παντα τα εθνη θαυμαζομενον παρα παντος ανθρωπου ετερᾳ βασιλειᾳ ουκ ὑπαρχει το τοιουτο*, 148 p.

[5] Ibn Batoutah similarly speaks of Calicut, the great emporium of his day. "Un des grands ports du Malabar. Les gens de la Chine, de Java, de Ceylon, des Maldives, du Yaman, et du Fars s'y rendent, et les trafiquants de diverses régions s'y réunissent. Son port est au nombre des plus grands du monde," iv., 89. Dufrémery, tr.

[6] Vide 140 p. and 338 p.

[7] Vide 339 p.

[8] *διατεμνει ουν πολλα διαστηματα ὁ δια τηριοδου ερχομενος απο Τζινιτζας επι Περσιδα, ὁθεν ᾗ πληθος μεταξιου αει επι την Περσιδα ευρισκεται*, 138 p. B.

[9] ib. "Vaticanus autem *Ουννια* secundâ manu." Note.

from the quantities of silk always to be found in Persia and which it brought there; but that it was used only by Persian, and not by Roman merchants,* I presume from the exaggerated length attributed to it by Cosmas, and his generally vague account of it.[1]

He speaks of Ceylon as situated in the Indian Sea beyond the pepper country midway between China and the Persian Gulf,[2] and as lying in the midst of a cluster of islands which all are covered with cocoanut trees[3] and have springs of fresh water. On the authority of the natives he gives it a length and breadth of about 200 miles each, and states that it is divided into two hostile kingdoms. Of these the country of the Hyacinth has many temples, and one with a pinnacle which is surmounted by a hyacinth the size they say of a fir cone, of a blood red colour, and so bright that when the sun shines upon it, it is a wondrous sight.[4] The other kingdom occupies the rest of the island, and is celebrated for its harbour and much frequented markets. The king is not of the same race as the people.

In Cosmas's time India seems to have been parcelled out into many petty sovereignties; for besides these two kings of Ceylon he knows of a king of Malabar, and kings of Calliena, Sindus, &c., but

* Ammianus Marcellinus seems to intimate that in his time this road was travelled by Roman merchants: "Præter quorum radices et vicum quem Lithinon pyrgon appellant iter longissimum mercatoribus petitum ad Seras subinde commeantibus," 335 p.

[1] Nisibis and Pekin are on the 37th and 40th parallels of north latitude respectively, and the one on the 41st, the other on the 117th parallels of longitude; there are consequently 76 degrees of longitude between them. But according to Cosmas there are 230 stations of 30 miles each, or 6,900 miles. In the same way between Seleucia and Nisibis he places 13 stations, or 390 miles, whereas there are in fact but 4 degrees of latitude. Might then these μοναι απο μιλιον λ' be απο μιλιον κ' of 20 miles, which would pretty fairly give the real distance?

[2] "L'île de Kalah," Point de Galle, "qui est située à mi-chemin entre les terres de la Chine et le pays des Arabes." Relation Arabes, 93 p. It was then the centre of traffic both from and for Arabia, 94 id.

[3] αργελλια (336 p., Cosmas). The narikala of the Hindus, and the nardgyl of the Arabs. LVII. Discours Prel. Rel. Arabes; and for an account of the islands, id., p. 4.

[4] Hiouen-Thsang (A.D. 648, some century after Cosmas) thus: "A côté du palais du roi s'élève le Vihara de la dent de Bouddha Sur le sommet du Vihara on a élevé une flèche surmontée d'une pierre d'une grande valeur, appellée rubis. Cette pierre précieuse répand constamment un éclat resplendissant. Le jour et la nuit en regardant dans le lointain, on croit voir une étoile lumineuse," II., 141 p. Fa-hian, however, who was at Ceylon, A.D. 410: "Dans la ville on a encore construit un édifice pour une dent de Foe. Il est entièrement fait avec les sept choses précieuses," 333 p. Fa-hian thus mentions this Vihara, and, as if only lately built, but says nothing of the hyacinth, probably placed there subsequently to his time. v. Marco Polo, 449, Société Geog., ed.

all these rajahs seem to have acknowledged the supremacy of, and paid tribute to, Gollas, king of the White Huns,[1] a white people settled in the northern parts of India. Of this Gollas he relates that besides a large force of cavalry he could bring into the field 2,000 elephants, and that his armies were so large that once when besieging an inland town defended by a water fosse, his men, horse and elephants, first drank up the water, and then marched into the place dryshod.[2]

He speaks of elephants as of part of the state of an Indian monarch, and of the petty rajahs of the sea-board as keeping some five, some six, hundred elephants, and of the King of Ceylon as having moreover a stud of horses which came from Persia and were admitted into his ports duty free.[3] His elephants he bought and paid for according to their size at from 50 to 100 golden pieces[4] each, and sometimes even more. They were broken in for riding and were sometimes pitted to fight against one another; but with their trunks only, a barrier raised breast high preventing them from coming to closer quarters. The Indian elephants he observes have no tusks and are tamable at any age, while those of Ethiopia to be tamed must be caught young.[5]

As a Christian he naturally observed, and as a monk willingly recorded, the state of Christianity in the East. In Ceylon there was a Christian church of Persian residents, with a priest and deacons and other ecclesiastical officers,[6] all from Persia. At Male, Calliena, a bishop's see, and the Island of Dioscorides[7] (Socotora),

[1] *Το Ουννων των Εφθαλιτων εθνος, οὐσπερ λευκους ονομαζουσι.* Procopius, de Bell. Pers., I. III., 15 p. *Εφθαλιται δε Ουννικον μεν εθνος εισι ᾗ ονομαζονται μονοι δε ούτοι λευκοι τε τα σωματα ᾗ ουκ αμορφοι τας οψεις εισιν*, 16 p., id. The valley of the Indus seems to have been occupied by a Tartar tribe, even in the first century of our æra. Ptolemy calls the lower Indus Indo-Scyth. Reinaud, Mem. sur l'Inde, 81 p. and 104 p.

[2] Cosmas Indicopleustes. Montfaucon, Nova Coll. Patrum, I., 338 p.

[3] *Τους δε ιππους απο Περσιδος φερουσιν αυτῳ, ᾗ αγοραζει ᾗ τιμᾳ ατελειαν τους φεροντας*, 339 p. This importation of horses into India, and from Persia, continues to this day, and is frequently alluded to by Ibn Batoutah, those from Fars were preferred, 372-3 pp., II., but they were then subject to a duty of seven silver dinars each horse, ib., 374 p.

[4] *νομισματα*, 339 p. The word used by Sopater in the preceding page, consequently a gold coin, see Embassy to Ceylon. Procopius observes that neither the Persian king, nor indeed any barbarian sovereign, places his effigy on his coins, II., 417.

[5] 339 p., u. s., and compare 141 p., with regard to the Ethiopian elephants from the inscription at Adule.

[6] *και πασαν την εκκλησιαστικην λειτουργιαν*, 337 p., u. s.

[7] So also the Relations Arabes of Socotera: "La plupart de ses habitants sont Chrétiens Alexandre y envoya une colonie de Grecs ils embrasserent

were Christian communities, also dependent on Persia for their ministers, and subject to the Persian metropolitan; and this, though in the case of Socotora, the inhabitants, colonists from the time of the Ptolemies, were Greeks and spoke Greek. In Bactria too, and among the Huns and other Indians, and indeed throughout the known world,[1] were numberless churches, bishops, and multitudes of Christians, with many martyrs, monks, and hermits.

He describes and gives drawings of some of the animals and plants of Ethiopia and India. In general he closes his descriptions[2] by stating, either that he has himself seen what he has been just describing and where and how he saw it, or if he have not seen it, what personal knowledge he has of it. Thus, to his notice of the rhinoceros he adds, that he saw one in Ethiopia and was pretty near it; to that of the Charelephus, that he had both seen it and eaten its flesh; to that of the hippopotamus, that he had not seen it, but had bought and sold its teeth: and to that of the unicorn, that he had only seen a statue of one in brass standing in the four-turretted palace in Ethiopia; but when he comes to speak of the bos agrestis, the moschos, and the pepper[3] and cocoanut trees, animals and plants belonging to India, he does not even hint at any personal knowledge of them, and I ask myself—Was Cosmas ever in India?

When his ship was nearly carried away into the Great Ocean, Cosmas was then bound for Inner India; and as he calls Taprobane an island of Inner India, by Inner India I presume that, unlike the ecclesiastical writers of his age, he intends not Ethiopia and Arabia

la religion Chrétienne. Les restes de ces Grecs se sont maintenues jusqu'aujourd'hui, bien que dans l'île il se soit conservé des hommes d'une autre race," 139 p., and see also note, 217-59 pp., II. v., where Reinaud refers to both Cosmas and the Periplus of the Erythræan Sea; see also Marco Polo, 702 p., Marsden's ed.

[1] Cosmas goes through the several nations in detail; but having to do only with India I omit particulars. I observe, however, that he gives no Christians to China, though Masoudi says of Canton, in the 10th century: "the town is inhabited by Moslims, Christians, Jews, and Magians, besides the Chinese." Meadows of Gold, 324, I. In the space of three centuries then Mahomenadanism had penetrated to China. At the same rate of progress Christianity should have been known there in the 6th century.

[2] For these descriptions vide 344-5 pp., and the drawings at the beginning of II. v. Montfaucon's Nova Coll. Patrum.

[3] He describes the pepper tree as a sort of vine, very unlike the pepper trees I have seen at Palermo. He probably means the betel. "The betel is a species of pepper, the fruit grows on a vine, and the leaves are employed to wrap up the areca-nut.' Heeren, Hist. Res., II., 294. "The betel is found in the two Indian peninsulas, Malabar and Arracan," id., 295.

Felix, but the Indian Peninsula.[1] Again, in another place, after having spoken of Ceylon, and alluded to the principal marts of India, to the White Huns settled on its northern frontier and the lucrative commerce the Ethiopians carry on with them in emeralds,[2] he adds "and all these things I know partly of my own knowledge and partly from what I have learned by diligent inquiry made at no great distance from the places themselves." But this surely is no evidence of India visited, at least not such evidence as is before us of his having been at Auxume, where at mid-day with his own eyes he saw the shadows falling south; at Adule, where at the request of Elesboas, he copied the inscription on Ptolemy's chair;[3] or in Sinai, which he trudged through on foot listening to the Jews as they read for him the Hebrew letters sculptured on its bolders.[4] So, notwithstanding that he passed the Straits of Bab-el-Mandeb and lay off the Island of Socotora; notwithstanding his name of Indicopleustes and his vague assertions; and, more than all, notwithstanding his narrative, which is sober as fact and commonplace as reality, I cannot help doubting that he ever was in India.

On a review of these notices of India, it seems: 1st. That for nearly a century after the fall of Palmyra no important mention of India was made by any Greek or Latin writer whatever. 2ndly. That the accounts of India which then and afterwards appeared, whether in Travels, Geographies, Histories, or Poems, those in the Topographia Christiana excepted, were all in the main made up of extracts from the writings of previous ages and added nothing to our knowledge of India. 3rdly. That of such writings, they in general preferred, not those which recorded the best authenticated facts,[5] but those which worked most on the imagination; and they indeed heightened their effect by new matter of the same character. 4thly. That they gradually took rank with, and

[1] See supra, note 4, p. 22.

[2] 339 p. "Autrefois on portait dans l'Inde l'émeraude qui vient d'Égypte" (Rel. Arabes?), 153, I., 232, II.

[3] For Auxume, 264 p. Adule, 144 p., id.

[4] *ὀθεν εστιν ιδειν εν εκεινῃ τῃ ερημῳ του Σιναιου ορους εν πασαίς ταις καταπαυσεσι παντας τους λιθους των αυτοθι, τους εκ των ορεων αποκλωμμενους γεγραμμενους γραμμασι Ἑβραικοις, ἁ τινα ἢ τινες Ιουδαιοι αναγνοντες διηγουντο ἡμιν, λεγοντες γεγραφθαι ὑυτως, απερσις του δε, εκ φυλης της δε, ετει τῳδε, μηνι τῳδε, καθα και παρ ἡμιν πολλακις τινες εν ταις ξενιαις γραφουσιν*, 205 p. Does he allude to the Nabathæan inscriptions: "qui couvrent les parois des rochers de la presqu'île du mont Sinai." Reinaud, Mem. sur la Mérène, 12 p., tirage à part; and for these inscriptions, Journal Asiatique, Jan. and Feb., 1859.

[5] The description of India in Ammianus Marcellinus must be excepted from this censure, v.

even displaced the more critical studies of Strabo, Arrian, Ptolemy, &c. Thus the Periegesis of Dionysius, on which Eustatius wrote a commentary, and the Geography of the anonymous writer who, so far as I know, first gave locality to Eden, were honoured by Latin translations, and, judging from the currency their fictions obtained, became the text books of after ages. Thus, too, the Bassarika of Dionysius, for Indian countries and towns, is more frequently referred to by Stephanos Byzantinus, than either Strabo or Arrian; and thus the Apollonius of Philostratus becomes an authority for Suidas,[1] and the Theban Scholasticus for both Suidas and Cedrenus, who borrow from him their accounts of the Brahmans,[2] to which Cedrenus adds some particulars drawn, partly from the anonymous Geography probably, partly from the Pseudo-Callisthenes, and partly from some other writer whom I am unable to identify. 5thly. That of Eastern travellers in the 4th or 5th centuries many were priests: as we may surmise from the number of Christian churches in India, which were all subject to the Persian metropolitan,[3] and all received their ecclesiastical ministers from Persia, or sent them there for education and ordination: and as we gather from the frequent mention of priests in the travels of those ages. Thus the author of the Tract inscribed to Palladius,[4] and the Theban Scholasticus visit India in company, the one of the Bishop of Adule, the other of a priest. And Cosmas travels on one occasion with Thomas of Edessa, afterwards metropolitan of Persia, and Patricius of the Abrahamitic order; and himself in his latter years becomes a monk, as also Monas,[5] who assisted him in copying the Inscription on the throne of Ptolemy. 6thly. That notwithstanding the religious spirit which evidently animated the travel writers of these times, their accounts of other and far countries are, contrary to what one might have expected, singularly silent on the subject of the religions of the people they visited. I have already expressed my surprise, that

[1] Vide sub vocibus Poros, et Brahmans. Suidas.

[2] Hist. Comp., 267-8, I. v., Bonn. Here the description of the Brahmans is from Palladius; of the Macrobioi from the Geography; the story of Candace from the Pseudo-Callisthenis, III., 23; but whence Alexander's visit to Britain?

[3] Jesujabus of Adiabene, Patriarch A.D. 650 (Assemann, III., 313 p.), thus remonstrates with Simeon, Primate of Persia: "At in vestrâ regione ex quo ab Eccles. canon. defecistis interrupta est ab Indiæ populis Sacerdotalis successio: nec India solum qua a maritimis reg. Pers. finibus usque ad Colon spatio 1200 parasangs extenditur, sed et ipsa Pers. regio in tenebris jacet." Assemann, Bib. Or., III., 131.

[4] Palladius was himself a great traveller, vide Hist. Lausiaca, 1027 p., as indeed were the monks and priests of these ages, ib. passim.

[5] He entered the monastery of Raithu, Elim. Cosmas, 195 p.

the earlier Christian fathers, who, to win the attention of the sleeping nations, called up from their tombs the forgotten creeds of Chaldæa and Phœnicia, Assyria and Egypt, should never have appealed to the living faith of Buddha. Its ritual was not unlike the Christian. Like Christianity, it rejected the claims of race and country, and in itself found another and stronger bond of brotherhood. Like Christianity, it was a religion Catholic and apostolic, and to attest its truth, not a few had died the martyr's death. It was, besides, the creed of an ancient race; around and about it was a mystery which startled the self-sufficiency of the Greek, and awakened to curiosity even Roman indifference. It was eminently fitted to elucidate Christian doctrines, and therefore to draw to itself the attention of Christian writers,[1] and yet the name of Buddha stands a phantom in their pages. But then few were the Hindus who visited the Roman world, and all as merchants lived buying and selling, though not all were Buddhists. And if, here and there, one more earnestly religious than his fellows was eager to preach his law, whom could he address, and where find an interpreter for thoughts so far out of the range of the ordinary Greek intellect? Allow, however, that he had studied and mastered the Greek language. Among his auditory, the merchants with whom he traded, the few men of letters, if any, who sought his society, that a Christian, one of a small community, should have been found, is an accident scarcely to be expected, and the silence of the fathers is in some measure intelligible. But now that we have a Christian church at Ceylon, and Christians who are daily witnesses of the ceremonial of Buddhist worship, who have heard of Buddha's life, and miracles, and mission, and have visited the monasteries where his followers retire to a life of prayer and self-denial, I cannot understand how it is that no word relating to this wide-spread faith has reached the ears of Cosmas, or has attracted the notice of Syrian bishops, and that these ages are worse informed on Buddhism than was that of Clemens Alexandrinus.

[1] Buddhism and Buddhist practises attracted the attention of the earliest travellers of our age. Vide Carpinus, in Hakluyt, 64, I. Rubruquius, 118, 127-8 ib., Marco Polo, 47 p., S. G. ed., and a summary of what was known of Buddhism in his own time in Maffei, Hist. Indic., 169 p., 12mo. Marco Polo too has given an account of Buddha, 449-50 pp., u. s., with some errors, no doubt, but wonderfully correct and detailed when compared with the short notices in Greek writers. But still none of these early travellers, I am bound to say, connect, or see any similarity between the Buddhist and Christian services. Marco Polo only observes of Buddha "si fuisset Christianus fuisset apud Deum maximus factus," ibid.

We will now trace the changes which took place in the commercial relations of Rome and India. When Palmyra fell, Alexandria did not, as might have been expected, inherit its Indian trade, and the wealth and power that trade brought with it. For when Palmyra fell, Alexandria was suffering from civil war, recent siege and capture. Its citizens had been given up to plunder and put to the sword, and Bruchium, its noblest quarter, razed to the ground.[1] It was overwhelmed by its own disasters, and in no condition to engage in distant and costly ventures. But when Palmyra fell, the fleets, Arab and Indian, which fed its markets, did not perish in its fall. The ships and crews lived still, the populations to whose wants they ministered[2] had not disappeared. The old demand existed. For a moment the course of trade is disturbed. A great mart has been destroyed, and others must be found or created to take its place. At first, probably, the merchant fleets, as was their wont, made for Vologicerta, and there delivered their cargoes, which perhaps found a way up the right bank of the Euphrates to Apamea, and thence to Antioch and the cities of Syria. But the cost of transit and the want of a back freight must very soon have closed up this route, in so far at least as it was the route to the Syrian sea-board, though, doubtless, the river remained always the great highway for the supply of Mesopotamia and the neighbouring states. And now it was that the Arabs and Indians probably began to frequent the ports which, unknown to Strabo and Pliny, studded, according to Ammianus Marcellinus, the Persian Gulf;[3] hither they brought the products of the East, and hence shipped horses, for which they found a ready sale among the kings and nobles of India and Ceylon. And now, too, it was that the Arabs turned their attention to the Red Sea route,[4] once in the hands of the Alexandrian merchants, but now neglected. In a deep bay on the western shores of the Arabian Gulf,[5] the first, after having entered the straits, which afforded shelter and a safe anchorage, they

[1] See from Ammianus Marcel. and Eusebius, notes, 297 p., xix. v., Jour. Rl. As. Soc.

[2] Appian thus describes the Palmyrenes: *Ρωμαιων ἠ Παρθυαιων οντες εφορισι, ες εκατερους επιδεξιως ειχον· εμποροι γαρ οντες, κομιζουσι μεν εκ Περσων τα Ινδικα ἠ Αραβικα, διατιθενται δ' εν τη Ρωμαιων*, de Bel. Civil., v. ix.

[3] "Cujus sinus per oras omnes oppidorum est densitas et vicorum, naviumque crebri decursus," xxiii., 6, 11.

[4] It had been known from old time. Agatharcides (2nd cent. B.C.) speaks of the native boats which from the Fortunate Islands (probably Socotora) traded with Pattala, on the Indus. De Mari Eryth., 103 §. Muller, Geog. Min., I., 191 p.

[5] *εμποριον νομιμον κειμενον εν κολπῳ βαθει απο σταδεων εικοσι της θαλασσης εστιν ἠ Αδουλις κωμη συμμετρος.* Periplus, 45§, or 4§.

found Adule, the chief port of Ethiopia, though in the time of the Periplus only a village. They saw that access to it both from East and West was easy, that it lay beyond the confines, and was not subject to the fiscal regulations of the Roman Empire; that its mixed population, of which the Arab race formed no inconsiderable part, was friendly and eager to forward their views. On Adule, then, they fixed as the depôt for their trade, and soon raised it from a village and petty port, to be one of the world's great centres of commerce.

But under the immediate successors of Aurelian (died A.D. 275), the Roman Empire was in so disturbed a state, and under Diocletian (A.D. 283-304) Alexandria suffered so fearfully for its recognition of Achilleus, that its merchants were probably compelled, and not disinclined, to leave the whole Indian trade in the hands of the Arabs, who had always been, not only carriers by land and sea, but traders also, as the story of Scythianus proves; and who, as they travelled from city to city, carried their wares[1] with them, and wherever they stopped exposed them for sale and thus supplied the immediate wants of the neighbourhood and the tradesmen of the district. But with the restoration of order, during the long reign of Constantine, the Roman merchant grew wealthy and enterprising; he extended the sphere of his operations, and though, partly from inability to compete with the cheaply built but well manned craft of the Arabs, and partly from long disuse and consequent ignorance of the Indian seas, he does not seem to have again ventured his ships upon them, yet he gradually recovered his old position in the Arabian Gulf, and at least shared in its trade from Adule homeward.[2] To Adule he himself resorted, and at Adule, through his agents,[3] managed his dealings with the East, leaving to the Arabs, and perhaps the Indians, all the risks and profits of the ocean voyage.

[1] The wealth of Scythianus, when it came into the hands of Manes, consisted χρυσου ϰ̀ αργυρου ϰ̀ αρωματων ϰ̀ αλλων (Epiphanius a. Manichæ, 617, I.) showing that Scythianus's journey to Jerusalem, if undertaken primarily in the interest of truth, was not without some commercial object.

[2] Both by his ships on the Red Sea and his fleets of boats on the Nile. Of Roman ships on the Red Sea we know from Cosmas and Procopius (de Bello Pers., I., 19, 101 p.) Of the traffic on the Nile we may get some notion from the ruse employed by Athanasius to escape from his pursuers (Photius, Hoeschiel, 1448 p.), and more directly from the wealth Palladius gives an Alexandrian merchant, ανδρα ευλαβην ϰ̀ φιλοχριστον, δυο μυριαδας χρυσινων πραγματευομενον μετα ἑκατον πλοιων εκ της ανωτερας θηβαιδος κατιοντα. LXV., Hist. Lausiaca.

[3] I conclude this from a passage in Procopius, already cited in part. Telling of the slaves and adventurers left behind him by Hellestheaus, on his return from the conquest of the Homerites, he says ὁυτος ὁ λεως συν ἑτεροις τισιν Εσιμιφαιῳ

But that Roman intercourse with India was indirect and kept up by Arab vessels is so contrary to received opinion, that I will now cite and examine the few events and notices bearing on the Indian trade which are to be met with in ancient writers. And,

I. The embassy to Julian[1] (A.D. 361) is scarcely conceivable, unless during his reign, or rather that of Constantine, some and probably a commercial intercourse existed between India and the Roman Empire.[2] But as for such an embassy, the presence at the Singhalese Court of any enterprising Roman merchant, a Sopater, and who like Sopater may have reached Ceylon in an Adulitan ship, would fully account,—and indeed its Serendivi so much more akin to the Serendib of the Arabs than the Salike of Ptolemy smacks of Arab companionship, and must have filtered through Arab lips—I cannot look upon it as indicative of an intercourse either direct or frequent.

II. Epiphanius (about A.D. 375) gives some few details relating to this trade. In his story of Scythianus he speaks of the Roman ports of entry in the Red Sea, Œla, the Alah of Solomon, Castron Clysmatos,[3] and Berenice, and observes that through Berenice Indian wares are distributed over the Thebaid, and by the Nile are carried down to Alexandria and the land of Egypt, and to Pelusium, and thus passing by sea into different cities, *πατριδας*,[4] the merchants

τω βασιλει επανασταντες αυτον μεν εν τινι των εκεινη φρουριων καθειρξαν, ετερονδε Ὁμεριταις βασιλεα κατεστησαντο Αβραμον μεν ονομα· ὁ δε Αβραμος οὑτος χριστιανος μεν ην, δουλος δε Ρωμαιου ανδρος, εν πολει Αιθιοπων Αδουλιδι επι τη κατα θαλασσαν εργασιᾳ διατριβην εχοντος, Id. I. 20, p. 105. And that commercial agents were of old date may be shown from Relations Arabes, I., 68.

[1] Vide Journ. As. Soc., xix., 274 p.

[2] In a Geographical Tract, Totius Orbis Decriptio, translated from the Greek and written A.D. 350-3, Geog. Minor., II., 520, it is said of Alexandria: "Hæc cum Indis et Barbaris negotia gerit merito; aromata et diversas species pretiosas omnibus regionibus mittit." But another version, ib., "supra caput enim habens Thebaidis Indorum genus et accipiens omnia præstat omnibus"—thus showing that although dealing in Indian wares its Indians were only Ethiopians.

[3] So called because here the Israelites crossed over the Red Sea. Cosmas, Montfaucon, Col. Non. Pat., 194 p.

[4] *Ὁρμοι γαρ της Ερυθρης θαλασσης διαφοροι, επι τα στομια της Ρωμανιας διακεκριμενοι, ὁ μεν εις επι την Αιλαν ὁ δε ἑτερος επι το Καστρον Κλυσματος· αλλως δε ανωτατω επι την Βερνικην καλουμενην, δι' ης Βερνικης καλουμενης επι την Θηβαιδα φερονται ᾗ τα απο της Ινδικης ερχομενα ειδη εκεισε τῃ Θηβαιδι διαχυνεται, ᾗ επι την Αλεξανδρειαν δια του Νειλου ᾗ επι πασαν των Αιγυπτων γην, ᾗ επι το Πελουσιον φερεται, ᾗ ὁυτως εις τας αλλας πατριδας δια θαλασσης διερχομενοι ὁι απο της Ινδικης επι την Ρωμανιαν εμπορευονται.* Epiphanius, a. Hæres., XLVI., 618 p., I.

from India import their goods into the Roman territory. From this passage, written at the close of the 4th century, it appears:

1st. That Epiphanius speaks of Indian goods as then imported by sea and through one port, Berenice, into the Roman Empire.

2ndly. That he uses the same terms[1] to designate both the imported goods and the importing merchants, and thus possibly intimates that like the goods the merchants also were "Indian," *i.e.*, Arabs of either Ethiopia or Eastern Arabia, the Indians of the ecclesiastical writers of this age. Indeed one might ask whether it was not owing to their association with Indian wares that these peoples came to be themselves known as Indians.

3rdly. That he makes no mention of Adule. But Adule, however closely connected with the ocean trade between Rome and India, was really an Ethiopic city, and could therefore scarcely find a place in this itinerary which begins with the Roman ports of entry.

III. The presence at Alexandria (some time before A.D. 470) of those Hindus whom Severus lodged in his house.[2] I have already remarked on the inexplicable proceedings of these travellers who, as they were neither merchants nor public officers, could only have travelled for amusement or instruction, and who took every precaution against either.[3] I would now direct attention to the character as well of Severus who received, as of Damascius who has recorded their visit. Both clung to the old superstition: and the one was supposed to favour its re-establishment by his personal influence and the other by his writings, the very dotage of "Platonic Paganism."[4] Both were credulous: and as Severus would without examination and only too eagerly have welcomed as guests any men calling themselves Hindus with whom he became acquainted, so Damascius would have noticed a visit of any reputed Hindus, whether made or not, if said to be made to such a man. The visit is open to suspicion.

IV. The Indian Embassy to Justinian. Malalas notices two

[1] τα απο της Ινδικης ερχομενα ειδη and διερχομενοι οι απο της Ινδικης. The lighter and more precious wares are expressed by the word ειδη, as spices, pearls, &c. It corresponds with the "notions" of American commerce.

[2] Vide supra, p.

[3] Many an English traveller might be cited whose habits abroad very much resemble those of Damascius' Hindus. But then we travel for fashion's sake a good deal, because we must; but a Hindu who leaves his country travels because he has in him the spirit of travel; he travels as Mungo Park did, Belzoni, Burkhardt, and many others, impelled by the strong desire to see strange men and strange lands.

[4] See Gibbon, Decline and Fall, c. xxxvi., sub an. 468, and the extracts from Damascius, in Photius Bibliotheca, 1042 p.

Indian Embassies, either of which may possibly be Hindu. The first reached Constantinople with its gifts the same year (A.D. 530) that John of Cappadocia was made Prætorian Præfect; the second with an elephant about the time (A.D. 552) that Narses was sent into Italy against the Goths.[1] Now with regard to the first of these Embassies, as in Malalas the Ethiopians and Eastern Arabs are called Indians,[2] the question arises whether this Embassy does not properly belong to some one or other of these peoples; and to answer it we must enter into some detail. From Malalas and Procopius[3] we gather: that there were seven Indian kingdoms, three Homerite, and four Ethiopian; that the Ethiopians occupied the regions lying eastwards and extending to the ocean, and carried on a great trade from Auxume with Rome through the Homerite country; that some time prior[4] to A.D. 529, Dimnos the Homerite king, who with many of his people was of the Jewish persuasion, seized upon some Roman merchants while traversing his dominions in pursuit of their business, confiscated their goods, and put them to death, in retaliation, as he pretended, for the continued persecutions to which Jews were subjected in the Roman states; that the Auxumitan trade with Rome was in consequence interrupted, and that the Auxumitan king, aggrieved by the injury to himself and the wrongful death of his allies, invaded and subdued the Homerites, and in fulfilment of a vow contingent on his success declared himself a Christian. To this Ethiopian sovereign or rather his successor, called Elesboas by Malalas, Hellesthæus[5] by Procopius, on the breaking out of the Persian War (A.D. 529), Justinian sent an embassy, and adjured him by their common faith, to invade the Persian territory, and breaking off all commercial relations with the Persians to send ships to those Indian ports where silk was to be found, and there purchase it, and thence by way of the Homerite country and down the Nile and through Egypt, to

[1] V. from Malalas, note 4, 274 p., xix., Journ. As. Soc., and Malalas, 484 p.: Ινδικτιωνος εγ' πρεσβευτης Ινδων κατεπεμφθη μετα ϗ ελεφαντος εν Κωνσταν:

[2] Malalas, u. s., and 457 p.; also Asseman, Bib. Orient., IV., 452-3 pp.

[3] Malalas, 433 p. Procopius, de Bello Pers., 104 p. The division of the Indians into kingdoms belongs to Malalas; the slaughter of the Roman merchants and its cause and consequences to both.

[4] In A.D. 524, vide Asseman, u. s., I., 365, note.

[5] The converted king Malalas calls Andas, 434 p. Theophanes Adad; Aidog, Asseman, u. s., I., 359, notes 5 and 6. The king of the Embassy, Cosmas, like Malalas, knows as Elesboas. The ambassador I should have thought was Nonnosus, who left an account of his embassy, and from the ambassador, whoever he was (Procopius calls him Julianus), Malalas derived his information, 457-8 pp., ib.

import it into Alexandria; and as an inducement to attempt this enterprize he held out to him the prospect of a monopoly and the hopes of great profits. But Procopius observes that, though the Ethiopians promised and exerted themselves, they failed to gain a footing in the silk trade: for they found the ground already occupied by Persian merchants who everywhere forestalled them in the Indian markets.[1] And Malalas concludes his account of this negotiation by stating that Elesboas in return sent an Indian ambassador with letters, σακρας, and gifts to the Roman Emperor. Is then our Indian Embassy the same as this one from Elesboas?[2] and does its first mention refer to its departure from Auxume, its second to its arrival in Constantinople? Or is it to be referred to some one of the Pseudo-Indian kingdoms? Or though unrecorded by any other writer, is it really Hindu? Who shall tell? With regard to the second Embassy: it is noticed by both Theophanes and Cedrenus,[3] but noticed seemingly not because it was any strange sight in Constantinople, but because its elephant, a native of Africa as of India, broke loose and did much mischief. However this may be, a Hindu Embassy in Constantinople was no improbable event, for after Elesboas had, at the instance of Justinian, ineffectually attempted to open up the trade with India, would he not naturally bring over and forward to the Roman Court some native Indians, ambassadors or others, as the surest evidence he could

[1] τοις τε Αιθιοψι την μεταξαν ωνεισθαι προς των Ινδων αδυνατον ην. επει αει δε οι Περσων εμποροι προς αυτοις τοις ορμοις γενομενοι (ὁν δε πρωτα ἀι των Ινδων νηες καταιρουσιν, ἀτε χωραν προσοικουντες την ὁμορου) ἀπαντα ωνεισθαι τα φορτια ειωθασι. Procopius, u. s., 106 p.

[2] Elesboas having received and entertained Justinian's Embassy, κατεπεμψε ἡ σακρας δια Ινδου πρεσβυτερου ἡ δωρα τῳ βασιλει Ρωμαιων. Malalas, 459 p., and afterwards 477 p., incidentally mentions the Embassy we have been examining: εν αυτῳ δε τῳ χρονῳ ἡ πρεσβυτης Ινδων μετα δωρων κατεπεμφθη εν Κωνσταντινουπολει, ἡ αυτῳ τῳ χρονῳ Ιωαννης ὁ Καππαδοξ εγενετο επαρχος πραιτωριων.

[3] The chronology of these times is loose and uncertain. According to Theophanes (Chron. I., 346-7), the christianization of Auxume, and the events which led to it, occurred A.D. 535, and the Embassy with the elephant, A.D. 542. Cedrenus refers it to A.D. 550. Taking then the dates assigned by Malalas, A.D. 530 for our first, A.D. 552 for the second, Embassy, and it is clear that the first Embassy follows too closely on the alliance and engagements of Elesboas, while between these and the second there is too great an interval, to admit of the reasons I have adduced for either one of these Embassies being Hindu. Of Theophanes' dates (he lived early part of 9th century) I scarcely like to speak—the first is so manifestly wrong. But if we take A.D. 542 for the date of the Elephant Embassy, and A.D. 533, Gibbon's, for that of Justinian's to Auxume, then these reasons would be pertinent enough.

give of his good faith and zeal in carrying out his part of the treaty? One of these embassies may be Indian, but it is no proof of any direct intercourse with India. Indeed the whole narrative rather intimates that Roman enterprize extended no further than Auxume, and that all trade beyond was in the hands of some other people.

V. The introduction of the silk-worm into the Roman Empire. According to Procopius,[1] it happened in this way. Aware of the interest Justinian took in the silk trade, some monks from India who had lived long in Serinda (Theophanes[2] says it was a Persian), brought over in a reed (*εν ναρθηκι*) silk-worm's eggs, taught the Romans how to treat them, and by acclimatizing the worm to make themselves in the article of silk independent of the Persians and other people. I incline to think that the monks were Persians; for India was under the Persian metropolitan, and its churches, as we learn from Cosmas, were served by priests from Persia; and a Persian Christian would be more Christian than Persian, and more likely to benefit his co-religionists than his countrymen. But let the monks be Romans, and Romans we know did occasionally visit and sojourn in India, and their introduction of the silk-worm is no evidence of any ocean trade with India.

VI. A passage in Procopius which intimates that Roman ships frequented the seas in which were found the loadstone rocks. This passage I will quote at length and examine. After having described the Arabian Gulf from Œla, and told of its islands and the Saracens and Homerites on its Eastern coast, and alluded to the many other peoples living inland up to the very borders of the cannibal Saracens, beyond whom he places the Indians, "but of the Indians leaves others to speak at their discretion,"[3] Procopius returns to Boulika of the Homerites, and notices the calm sea and easy transit thence to Adule. He then proceeds to treat of Ethiopia, but first touches on the peculiarly constructed boats used by the Indians, *εν Ινδοις*, and on this sea. "They are not," he observes, "painted

[1] *Υπο τουτον τον χρονον τινες μοναχων εξ Ινδων ηκοντες γνοντες τε ως Ιουστινιανῳ δια σπουδης ειη μηκετι προς Περσων την μεταξαν ωνεισθαι Ρωμαιους*, &c. De Bel. Goth, 546 p.

[2] *την των σκωληκων γενεσιν ανηρ Περσης εν Βυζαντιῳ υπεδειξεν· ουτος εκ Σηρων το σπερμα των σκωληκων εν ναρθηκι λαβων μεχρι Βυζαντιου διεσωσατο*, &c. Excerpta Theoph. Hist., 484 p., lived close of 6th century. The seed was brought overland, as the French, to avoid the tropical heats, are now sending it.—*Times*, May 12, 1863.

[3] *οι δε Ομηριται ουτοι εν χωρᾳ τῃ επεκεινα ωκηνται προς τῃ της θαλασσης γονι, υπερ τε αυτους αλλα εθνη πολλα, μεχρι ες τους ανθρωποφαγους Σαρακηνους, ιδρυσθαι φασι· μεθ' ους δε τα γενη των Ινδων εστιν. αλλα τουτων μεν περι λεγετω εκαστος ως πῃ αυτῳ βουλομενῳ εστιν.* De Bello Pers., 100 p.

over with tar or anything else, nor are their planks made fast to one another by iron nails, but with knotted ropes, *βροχοις*, and this not as is generally supposed, because there are in these seas rocks which attract iron (*for the Roman ships from Œla, though iron-fastened, suffer nothing of the sort*), but because the Indians and Ethiopians neither have any iron nor are able to buy any from the Romans who are forbidden to sell it them on pain of death. Such is the state of things about the so-called Red Sea and the coasts on each side of it."[1] On this passage I will observe—

1st. That as long as it treats of the shores of the Arabian Gulf, where the Romans traded, its language is clear and definite enough, but as vague when it comes to speak of the inland peoples, of whom very evidently Procopius had been able to obtain very imperfect information.

2ndly. That the Indoi with whom the Ethiopians and the Persians seem to have had commercial dealings must have been the inhabitants of a country without iron, and not therefore of India celebrated of old time[2] for its steel, but very possibly of Arabia,[3] into which in the age of the Periplus iron, and sometimes from India, was regularly imported, and the boats of which[4] quite answered to the description of Procopius. And

3rdly. That the last paragraph indicates that Procopius confines his observations to that part of the Red Sea which is inclosed by coasts on either side, the Arabian Gulf, and that consequently the loadstone rocks referred to are not those on the Singhalese coast, but loadstone rocks in or near the Arabian Gulf.

VII. We have Chinese authority that a great trade between Rome and India existed in the 6th century of our era. Ma-touan-

[1] *τα μεν ουν αμφι τῃ ερυθρᾳ θαλασσῃ ἡ χορᾳ ἡ αυτης εφ ἑκατερα εστι ταυτῃ πῃ εχει*, ib., 102 p.

[2] Ctesias, p. 80, 4.

[3] Of Arabia or Arabians settled in Ethiopia. Elsewhere Procopius speaks of Ethiopia as India: Νειλος μεν εξ Ινδων επ Αιγυπτου φερομενος, &c. De Ædificiis, vi. I., 331 p., III.

[4] "Les vaisseaux Arabes n'approchaient pas pour la force des vaisseaux Chinois (Ibn Batutah mans each junk with 1,000 men, 600 sailors and 400 soldiers, iv., 91, French tr.) construits en général en bois et sans mélange de fer, ils tiraient très-peu d'eau Les Arabes employaient dans leurs constructions navales des planches de cocotiers, et ces planches étaient liées entre elles avec des chevilles de bois." And Rel. Arabes, Dis. Prel., 56 p. "Il n'y a que les navires de Siraf dont les pièces sont cousues ensembles," ib., I., 91 p.; but Ibn Batutah: "C'est avec des cordes de ce genre que sont cousues les *navires de l'Inde* et du Yaman," and he adduces as a reason why iron is not used, the rocky bottom of the Indian sea against which iron-bound vessels break to pieces. iv. 121.

lin, born A.D. 1317, in his Researches into Antiquity, briefly affirms "that India (A.D. 500-16) carries on a considerable commerce by sea with Ta-Tsin, the Roman Empire, and the Ansi or Asæ, the Syrians";[1] and the Kou-kin-tou-chou (Ancient and Modern Times), having alluded to the commerce of India with the West, states that the Roman trade with India is principally by sea, and that by sea the Romans carry off the valuable products of India, as coral, amber, gold, sapphires, mother of pearl, pearls, and other inferior stones, odoriferous plants, and compounds by concoction and distillation of odoriferous plants, and then adds that from these compounds they extract the finest qualities for cosmetics, and afterwards sell the residue to the merchants of other countries.[2] We observe—

1st. That silk is not included in the list of Indian merchandize (the $\epsilon\iota\delta\eta$ of Epiphanius) sent to the Roman Empire by sea.

2ndly. That this trade by sea necessarily presumes that the goods exported from India were known to be so exported either on Roman account or for the Roman market, but not that they were exported in Roman ships. We have seen that Roman merchants sometimes visited India, that in India Roman money was current, and the Roman Empire known and respected, and we may fairly suppose that that Empire, its trade, and its wants and their supply, were often subject of talk in the Indian[3] ports, and would

[1] Vide Chinese account of India, from Ma-touan-lin, tr. by Pauthier, Asiatic Journal, May to August, 1836, 213-7 pp. For the date of Ma-touan-lin's birth, v. his Life, Rémusat, Nouv. Mélanges Asiat., II., 168, where Rémusat compares Ma-touan-lin's great work to the Mém. de l'Académ. des Inscriptions, and observes that De Guignes in his Hist. des Huns, and the Jesuit missionaries in their several works, owe to it much of their knowledge of China and Chinese literature.

[2] Also tr. by Pauthier, Journal Asiatique, Oct. and Nov., 1839, 278, 389-93 pp. This account seemingly refers to India in the early part of the 6th century (ib., 274 p.); but it then goes back to speak of the relations which had before existed between Rome and China; how that (A.D. 166) Antin, Antoninus, sent an embassy through Tonquin with presents, and how the Romans in the interest of their commerce travelled as far as Pegu, Cochin China, and Tonquin; and how a Roman merchant, one Lun (A.D. 222–278), came to Tonquin, and was sent on by its Governor to the Emperor, and in answer to the Emperor's questions told of the ways and manners of his country. As Lun and his doings close this short summary of Roman relations with China, I conclude that he was one of the merchants mentioned above, and that they, like him, belong to the period ending A.D. 278, when Roman commerce with the East most flourished,—and as with one unimportant exception no further notice is taken of the Roman Empire, I presume that after this time its commerce with these distant regions entirely ceased.

[3] When in Bochara (A.D. 1250), Marco Polo meets the ambassadors of Kublai

certainly become known to the Chinese traders there, and would as certainly be spoken of by them on their return home, and would thus find their way into the works of Chinese geographers and historians.

But in order that we may not reason on to a foregone conclusion, hurrying over or explaining away the events and authorities which make against us, we will for a moment suppose that they sufficiently establish the fact of an ocean trade between Rome and India—and then as from the age of the Ptolemies (ending B.C. 46) to that of Firmus (A.D. 273), we know through Strabo, Pliny, the Periplus, Ptolemy, and Vopiscus, that Alexandrian ships sailed for India; we have to show why it is that after that time, though we read of Romans, lawyers, priests, and merchants, who travelled thither, and all seemingly through Adule, and one of them certainly in an Adulitan craft, we read of none who went in a Roman ship. How, too, is it, we will be asked, if Roman ships thus crossed the Indian Ocean, that neither they nor their crews are seen among the vessels and peoples which, according to Cosmas, crowd the port and thoroughfares of the great Singhalese mart? How, that the Christians of Socotora, an island of Greek colonists,[1] and right in the course of Alexandrian ships en route for India, were subject not to the Greek but the Persian metropolitan? And when Justinian, as Procopius relates, sought to re-establish the silk trade and to wrest it from the hands of the Persians, how is it that he applied, not to his own merchants of Alexandria, whose services he might have commanded, and whom, had they had ships in those seas, he would have wished to encourage, but to the Ethiopian Arabs, whom to the detriment of his own subjects he tempted with the hopes of a monopoly? Again on this supposition, how account for it, that the loadstone rocks, those myths of Roman geography, which in Ptolemy's time, the flourishing days of Roman commerce, lay some degrees eastward of Ceylon, appear A.D. 400 barring its western approach, and A.D. 560 have advanced up to

Khan; they press him to visit their master: "eo quod nullum *latinum* usquam viderat, quamvis videre multum affectarat," c. II. And Maffei (Hist. Ind., L. iv.) observes of the Byzantine Turks that in the 15th century the Indian kings called them "corruptâ Græcâ voce Rumos quasi Romanos." But while this indicates that the memory of Rome survived among the Hindus, it is no evidence of any commerce between the peoples, no more evidence than is the mention of an Indian princess in the romance of (Peredur?) of a knowledge of India among the Cambrian bards.

[1] Speaking of the inhabitants, the Periplus: εισι δε επιξενοι ϰ̀ επιμικτοι Αραβων ϰ̀ Ινδων ϰ̀ ετι Ἑλληνων των προς εργασιαν εκπλεοντων, 30§, 281 p.

the very mouth of the Arabian Gulf?[1] Surely an ocean trade with India is, all things considered, all but impossible.

But to return to the loadstone rocks. As in an age little observant of the laws and phenomena of nature, lands unknown save by report and unexplored are ever, according to their surroundings, invested either with mythic terrors or mythic beauties; and conversely, as all lands in the conception of which the mythic predominates are lands which lie outside the sphere of knowledge, and consequently of intercourse, of the people who so conceive of them; it follows that these rocks at the very least indicate the extreme limits of Roman enterprize, and the several changes in their position, changes ever bringing them nearer to the Roman Empire, the ever narrowing range of Roman enterprize in their direction. Their changes of position, therefore, confirm our view of the Roman maritime trade.

But though there is no evidence to show that at this period Roman ships navigated the Indian seas, we know that Indian goods still found their way to Constantinople, and from both Greek and Arab writers, that Arab vessels were employed in the Indian trade. So early as the age of the Ptolemies, Agatharchides[2] (B.C. 146) notices a trade between Aden and the Indus, and carried on in native boats, *εμπορικας των προσχωριων σχεδιας*. The Periplus (A.D. 89-90) speaks (26 §) of Arabia Eudæmon, Aden, as the great entrepôt of Indian commerce in the olden time, before Alexandrian ships ventured across the ocean; and describes Muza, Mokha, as a busy sea-port full of sea-faring men, shipmasters, and sailors, and as trading with Barygaza in its own craft.[3] And lastly, Cosmas (A.D. 535), among the merchant ships to be seen at Ceylon, mentions those of Adule and the Homerites. Arab writers also allude to this branch of Arabian enterprize. Thus Haji Khalfa,[4] in

[1] See supra, p., and the Pseudo-Callisthenes, III., vii., 103 p., Didot, and Procopius, sup., 38 p. For Ptolemy's Maniolai Geog. Lib. vii., c. II., p.

[2] De Mari Erythræo, 103 c., 191 p., II., Geog. Græci Min., ed. Müller.

[3] *το μεν ὁλον Αραβων ναυκληρικων ανθρωπων ἡ ναυτικων πλεοναζει ἡ τοις απ' εμποριας πραγμασι κινειται· συγχρωνται γαρ τῃ του περαν εργασιᾳ ἡ Βαρυγαζων ἰδιοις εξαρτισμοις.* 21§, 274 p., I., ib.

[4] "Ad qualemcq. historiæ Arabum et Persarum inquit Hemdani notitiam sibi parandam nemo nisi per Arabes pervenire potest Peragrabant enim terras mercatus causâ, ita ut cognitionem populorum sibi compararent. Pari modo qui Hizam incolebant Persarum historiam, Homeritarumq. bella et eorum per terras expeditiones cognoscebant. Alii qui in Syriâ versabantur, res Roman. Israel. et Græc. tradiderunt. Ab iis qui in insulis Bahrain et terram Ommân consederant historiam Sindorum, Hindorum et Persarum accepimus. Qui

his sketch of the ante-Islamic times, tells of the old Arabs: how they travelled over the world as merchants and brought home with them a large knowledge of the peoples they had visited: and how to the Islanders of Bahrain, and to the inhabitants of Omman, his age owed its histories of Sinds, Hindus, and Persians. And thus, though Masoudi[1] implies that in the early part of the 7th century the Indian and Chinese trade with Babylon was principally in the hands of the Indians and Chinese, yet have we every reason to believe from the Relation des Voyages Arabes, of the 9th century, that it was shared in by the Arabs whose entrepôt was Khanfou.[2]

But what in the meanwhile had become of the overland trade with India? When in the second half of the 3rd century, and after nearly 300 years of Parthian rule, the Sassanidæ reasserted the Persian supremacy over the peoples of Central Asia, taught by the misfortunes and fall of their predecessors, which they might not unfairly trace to a partiality for western civilization,[3] they eschewed Greek and Roman manners, literature, and philosophy. They besides restored and reformed the national faith, the religion of Ormuzd. They cherished old national traditions. They boasted themselves lineal descendants of the old Persian kings,[4] and stood forward as the champions of the national greatness. Their first communication with Rome was a threatening demand for all those countries which, long incorporated with the Roman Empire, had in old time been subject to the Persian dominion.[5] For a moment it seemed as though

denique, in Yemana habitabant cognitionem horum popul. omnium consecuti sunt, utpote regum erronum (Sayya'ret) umbra tecti." Haji Khalfa, tr. Flügel, I., 76, Or. Tr. Fund.

[1] "The Euphrates fell at that time (the time of Omar, died, A.D. 644) into the Abyssinian Sea, at a place now called en-Najaf; for the sea comes up to this place, and thither resorted the ships of China and India, destined for the kings of El-Hirah," 246 p., Sprenger's tr. But Reinaud, who by the way has no great confidence in Sprenger's accuracy, refers these observations to the 5th century. The passage is alluded to in a previous note, 295 p., Vol. xix., Jour. Rl. As. Soc., but incorrectly.

[2] Relations Arabes, 12 p., which gives an interesting account of the dangers and mishaps to which the merchant was liable, and which, p. 68, shows the commerce with China falling away, and why. In Ibn Batutah's time, in so far as the Chinese seas were concerned, "On n'y voyage qu'avec des vaisseaux Chinois," iv., 91; but of these the sailors were often Arabs—thus the intendant of the junk in which Ibn sailed was Suleiman Assafady, id., 94; and one of the men was from Hormuz, 96; and I think the marines were from Abyssinia.

[3] V. Tacitus, Annal., L. II., c. 2.

[4] Reinaud, sur la Mésène, 13 p., tirage à part.

[5] *Αρταξέρξης γαρ τε Περσης τους τε Παρθους νικησας στρατευματι τε πολλῳ ἠ τῃ Συριᾳ εφεδρευσας, ἠ απειλων ανακτησεσθαι παντα, ως*

by force of arms they would have made good their claim, but their barbaric pride proved their overthrow; and after they had spurned his friendship,[1] they were compelled to abate their pretensions in the presence of the victorious Odenatus, and subsequently to buy a peace of Diocletian by a cession of Mesopotamia and the eastern borders of the Tigris. Thus stayed in their career of conquest and even despoiled of their fairest provinces, they directed their attention to the consolidation of their power and the development of the resources of their kingdom. They anticipated and enforced that cruel policy which in later years was advocated by and has since borne the name of Machiavelli. Under one pretext and another, and sometimes by force of arms, they got within their hands and pitilessly ordered to death the petty kings who owned indeed their supremacy, but whose sway was really despotic and allegiance merely nominal.[2] To the hitherto divided members of their Empire they gave unity of will and purpose. They made it one State, of which they were the presiding and ruling mind. To educate and enlarge the views of their subjects, they did not, like their predecessors, study Greek and speak Greek, but they collected and translated the masterpieces of Hindu literature and Greek philosophy,[3] and thus nationalized them. They encouraged commerce. So early as the 4th century of our era, they entered into commercial relations with China, which they cultivated in the early part of the 6th by frequent embassies.[4] We hear, too, of their ambassadors in Ceylon, and with Ceylon and the East they

ἡ προσηκοντα ὁι εκ προγονων, ὁσα ποτε ὁι παλαι Περσαι μεχρι της Ἑλληνικης θαλασσης εσχον, &c. Dio Cassius: *ἡ Ξιφιλινον*, 80, 3 c.

[1] Sapor, who followed out the policy of his father, and forbade the use of the Greek letters in Armenia, and promised to make Merugan its king if he would bring it to the worship of Ormuzd (Moses Khorene, II., 83–4 pp., tr.), ordered his servants to throw into the river the rich gifts, *μεγαλοπρεπη δωρα*, of Odenatus, and tore up his supplicatory letters, *γραμματα δεησεως ὑνναμιν εχοντα*, and trod them under foot, and asked, "Who and what he was who dared thus address his Lord." "Let him come and with bound hands prostrate himself before me unless he is prepared to die, and all his race with him." Petri Patricii Hist., 134 p., Byzant. Hist.

[2] V. Reinaud, u. s., 46–7 pp.

[3] E. G. of Hindu literature, the Pancha-Tantra.—Assemann, Bib. Orient., III., 222. Plato and Aristotle, of Greek philosophers, &c.,—as we may gather from Agathias, II., 28 c., 126 p.

[4] "On a eu des rapports avec la Perse au temps de la seconde dynastie des Wei" (à la fin du 4ième siècle). Rémusat, N. Rel. As., I., 248. "Ce royaume, A.D. 518–19, payait un tribut consistant en marchandises du pays," 251 p., ib. "Le Roi, A.D. 555, fit offrir de nouveaux présents," 252 p.

carried on a large ocean traffic, as the many flourishing emporia in the Persian Gulf sufficiently indicate, and as Cosmas distinctly affirms. The old overland route to India, also, comparatively neglected in the great days of Palmyra and during the troubled reigns of the last Parthian kings, regained under their fostering care its old importance, and became the great high-road over which silk was brought to Europe. And such was the justice of their rule,[1] and such the protection and facilities they afforded the merchant, that silk worth in Aurelian's time its weight in gold, and a luxury of the rich and noble, was in the reign of Julian sold at a price which brought it within every man's reach.[2] By their treaties with Jovian (A.D. 363) and with the second Theodosius, they not only recovered the provinces they had lost, but acquired also, with a not unimportant cantle of the Roman territory, a portion of the much coveted kingdom of Armenia.[3] The overland route was now wholly in their hands, the Persian Gulf also was theirs, and when towards the close of Justinian's reign Khosroes Nushirwan[4] overran Arabia, and gave a king to the Homerites, they may be said to have held the Red Sea and the keys of all the roads from India to the West.

[1] Agathias, II. L., 30 c., 131 p., though he speaks of the high opinion held of the Persian rule to refute it.

[2] Of Aurelian's time, Vopiscus: "libra enim auri tunc libra serica fuit." Hist. Aug., II., 187. Ammianus Marcellinus observes of the Seres: "conficiunt sericum, ad usus ante hac nobilium, nunc etiam infimorum sine ullâ discretione proficiens." Hist., xxiii., 6.

[3] The hundred years truce between Theodosius and Bahram concluded A.D. 422. Gibbon, iv., 310 p. The final incorporation of Armenia as Pers-Armenia with the Persian Empire took place at the commencement of the 4th century, ib., 212.

[4] V. d'Herbelot, Bib. Orientale, s. v., but Theophanes (Hist., 485 p.) seems to place this event in the reign of Justin. Excerp. Hist., 485 p. Corpus Byz. Hist.

Art. XI.—*The Linguistic Affinities of the Ancient Egyptian Language.* By Reginald Stuart Poole, Esq.

[*Read 5th July*, 1862.]

[This paper was prefaced by some observations, of which the substance is here given.]

The importance of the relation of the ancient Egyptian language to the Semitic group will be acknowledged, if it is remembered that the late Baron Bunsen based upon this relation his theory of the derivation of the latter from the former or a closely-similar variety of speech.

It is necessary here to state briefly the reasons for the correctness of the method of interpreting hieroglyphics discovered by Dr. Young and developed by Champollion. The Rosetta Stone is the key. It is in three inscriptions, called in the third (which is Greek), sacred letters (hieroglyphics), enchorial letters, and Greek letters. Dr. Young's first step was the guess that certain signs enclosed in rings in the hieroglyphic inscription corresponded to the names of royal persons in the Greek. The alphabet he thus formed may, however, be independently obtained without any recourse to a guess. There is an enchorial papyrus in the Leyden Museum, in which certain words are transcribed in Greek characters. From these transcriptions an enchorial alphabet can be formed, by which the words enclosed in signs like parentheses in the enchorial inscription of the Rosetta Stone will be found to furnish the same names as the corresponding words enclosed in rings in the hieroglyphic inscription. We thus obtain the means of reading the two characters of ancient Egyptian. In order to interpret the language conveyed by these characters it is necessary to know that language. It has been always held that Coptic is substantially the same as ancient Egyptian. From the date of the Rosetta Stone to that of the oldest Coptic work, the translation of the Bible, not more than four or five centuries intervened, and there were no political causes that could account for any real change in the language during this

period. Coptic in this, its latest form, is essentially but little advanced beyond pure monosyllabism. But we have not to depend upon any such inferential reasoning. Ancient Greek and Latin writers have preserved to us a number of transcriptions of Egyptian words, with their meanings, which Parthey has collected in the appendices to his *Vocabularium Coptico-Latinum, &c.* The greater part of these words, if we exclude the names of plants given by Dioscorides, are easily recognisable in the Coptic dictionary, essentially unchanged in form and meaning. There can, therefore, be no doubt that ancient Egyptian, in its two dialects, the sacred and the vulgar—which cannot have differed much, if we compare the hieroglyphic and enchorial inscriptions of the Rosetta Stone—is essentially the same as Coptic. If, therefore, we can transcribe ancient Egyptian words (as has been proved possible), we have nothing further to do but to refer to the Coptic dictionary for their significations. This has been the course followed by the Egyptologists, and it has led to the recovery of enough of the ancient language to enable them to discover the general sense of any document.

Perhaps the most satisfactory confirmation of this system of interpretation is to be found in the minute and congruous nature of the information it affords as to the character of the ancient Egyptian language. A systematic grammar has never been obtained by a mere guessing interpretation, and, it may be asserted, will never be so obtained.

Before attempting to discover the characteristics of a single language, or to institute any comparison between languages, it is necessary to lay down a systematic classification of the varieties of human speech.

If we adopt what appears to be the only reasonable system, and class the languages of the simplest character lowest, and next, those more complex, gradually ascending, we obtain the following main divisions:—

a. Monosyllabic languages, such as the ancient Chinese. (Many languages, now polysyllabic, show evident traces of original monosyllabism: thus, in Turkish the accentuation and etymology of every syllable point to such an original condition.)

b. Agglutinate, as the modern Chinese. (The characteristic of agglutination may be illustrated from the formation of words in our own language, such as earring. It is observable that the absolute agglutination is often a slow operation, and in English the hyphen remains in all new words of this class, as nose-ring. We

have no instances in English of the yet-earlier condition in which each of the two words retains its separate declension, as the Latin respublica, cornucopiæ.

c. Amalgamate, as all the Semitic and Indo-European languages. The words "beseech," "beseeching," and "besought," present excellent instances of amalgamation.

The great question of comparative philology, always to be kept in view, is:—Can we infer a consecutive growth of languages? in other words, were they all originally monosyllabic, whether from one origin or not?

1. For the purpose of comparison, it is necessary to separate a language into radical and formative elements. The radical elements are the simple roots; the formative elements, not only the additions and modifications of declension and conjugation, but all those which are employed in the formation of derivatives. The division may be illustrated by the separation of vocabulary from grammar, though the vocabulary of a language includes more than its roots, and the grammar more than its formative elements.

The mere comparison of words as we find them, whether roots or derivatives, can lead to no clear results. A language may contain an abundance of words borrowed from another language of an essentially-different nature. Thus Persian is in roots and forms essentially-different from Arabic, yet it contains a multitude of Arabic words. An unscientific comparison of Persian words with Arabic words might lead to the theory that the two languages were nearly connected, and the consequence would be the same connection with Arabic, of German, or English, which are demonstrably kindred to Persian. Few persons are aware of the extraordinary agreements, which must be generally accidental, of individual words in languages which have no real points of contact either in radical or formative elements. Thus in hieroglyphics, BET is bad, HEP a bird (comp. to hop), SER a chief, SHAF a ram. Sixty years ago such agreements would have afforded matter for grave speculation.

But it does not follow that a scientific comparison of roots with roots is not of very different value to such a chance-method as that to which I have referred. If we find the roots of two languages, for the *most part*, to agree in form and in signification, we may be sure of their close relationship, as of Greek and Sanskrit. We must, however, be careful, if such a comparison does not give us a very great number of correspondents, closely to examine such

words as may be merely imitative of sounds, as names of animals derived from their cries, which abound in some languages, as in Coptic, *krour* a frog; *ouhor*, a dog; *emou*, a cat, and the like; yet while excluding such words, we must note their presence as a class as characteristic of the language. We must also lay little stress upon certain words which may reasonably be traced to some instinctive expression of admiration, fear, or any like feeling, and to the sense of personality, and of non-personality. Thus the identity of the name of the moon in Egyptian (AÄH), in several modern languages, and probably in some early dialect in Greece, Ἰώ, may perhaps be accounted for by the supposition that it is a natural expression of wonder, and the similarity of personal pronouns in languages otherwise utterly opposed, may, perhaps, be explained—it seems otherwise inexplicable—by the supposition that they express some instinctive sense of personality or non-personality. In the first and second cases we must look for a general identity of the names of objects of the doubtful classes, in the third we must require a very close resemblance.

2. The comparison of the Egyptian with any other language, therefore, cannot be attempted without a correct knowledge of its radical and formative elements.

The radical elements or roots of Egyptian are very easily discovered. They have not, as often in our language, to be faintly traced in the common character of a multitude of descendants which preserve the traits of a long-lost ancestor. They are incontrovertibly clear.

In form Egyptian roots are all monosyllabic. I am quite prepared to meet with opposition on this point, but I feel justified in maintaining it very strongly. In the whole of the Egyptian vocabulary there are even very few words which are not obviously monosyllabic roots or derivatives readily reducible to such roots: the exceptions are too few to affect the rule. In Coptic there is a departure from monosyllabism, but it is so obvious that it should occasion no difficulty.

We must not suppose that the Egyptian roots as transcribed by us are limited to the number of the corresponding sounds that we write. It is usual to take Bunsen's vocabulary of 685 so-called roots as representing all the roots of the old language known to us. But it will be observed that these roots are written in Roman characters, and frequently correspond to more than one hieroglyphic group. Thus SHA, "a diadem," and SHA, "a book," are written with different characters; and no process of ingenuity

could satisfactorily trace them to a common source. Further, there are roots written with the same characters, but distinguished by ideographic signs, placed after them to determine their sense, as HA, "a day;" and HA, "an abode." There can be no reasonable doubt that these words of seemingly-identical sound, represent, at least originally, differences of pronunciation, and that, as in Chinese, so in the most primitive Egyptian, a large variety of vowel-sounds increased the utility of a consonant or consonants. I am therefore disposed to think that Bunsen's list, after the exclusion of many words carelessly repeated in slightly-different forms, and of a few derivatives, whether of known or lost roots, must be held to contain upwards of a thousand distinct roots.

Egyptian monosyllabism is generally either biliteral or triliteral. The most common form is biliteral, the root being expressed by a consonant and a vowel; the next in order, triliteral, by a vowel between two consonants; the third, by a vowel and consonant; the fourth, by a vowel and two consonants; and so on. It is, perhaps, scarcely possible to say whether the biliteral or triliteral roots predominate. The place of the vowel also is often difficult to determine, for it is frequently omitted altogether, and it is very frequently written after two consonants, between which it must certainly in some cases have been pronounced.

The Egyptian formative syllables and words are immediately recognised as strikingly similar to the Semitic. The personal pronouns in their separate and enclitic forms and the use of the latter for the purpose of inflecting verbs and adding the possessive idea to nouns, are almost identical. It is not necessary to prove this well-recognised fact. In like manner the most common form of the substantive verb is the same as the Hebrew. The prepositions and adverbs are important as possessing the forms, and in their use as nouns the significations, of the primitive nouns from which they originated, thus warning us not to place the earliest known Egyptian very far from the first condition of the language. Egyptian has the power of forming derivatives, but these do not follow one single fixed system. They are framed in such a multitude of different ways that we cannot trace any dominant idea, as we can, for instance, in the Hebrew and Arabic verbs. There is but one very common derived form of the verb, that with S prefixed, which is causative, but there is a reduplicated form which has a frequentative or augmentative sense, and there are traces of three other forms, respectively with T, H, and N prefixed. The compounds are mere agglutinations of two words, never more, as

HAS-SBA, "a flute-player," from HAS, "to play," and SBA, "a flute." The amalgamate stage of compounds is never reached.

3. The changes which the Egyptian language underwent in the four thousand years of which we have its records, from the day when the inscriptions in the tombs of the subjects of Cheops were engraved till the death, ninety years ago, of the last speaker of Coptic, are chiefly valuable as showing the essential character of the language. It remained during this vast period an essentially-monosyllabic form of speech, never prolific of derivatives, and to the last unable to form compounds save by the rude process of agglutination, which loosely binds words together instead of fusing them into one mass. The approaches to amalgamation are mere colloquialisms. There is probably an important change in the transposition of certain verbal formatives which are prefixes in the Coptic but suffixes in the hieroglyphic, unless indeed their being written finally in the latter is on account of their subordinate character.

4. The Egyptian language may be compared with the Semitic languages on the one hand, and the African on the other; any comparison with the Iranian family is a point of less interest and probable result. On this occasion I intend to confine myself to the first comparison, hinting only at some results of the second, which I hope more fully to discuss on a future occasion.

The comparison will be first of roots, then of formatives. As the Egyptian language is monosyllabic, the first step is to endeavour to ascertain whether the theory that Semitic was biliteral before it reached its historical triliteral condition affords any aid in the comparison. Semitic roots, as we know them, are mainly triliteral, that is to say, there are three principal letters besides vowels. Thus in Hebrew we have the verb KaTaL, "he or it killed," in Arabic KaTaLa, where, in each case, the root is of three chief letters, no more having been anciently written.

These triliteral roots are, however, frequently monosyllabic, and it has therefore been conjectured by those who consider that every language must have gone through a long course of growth that the rest were originally monosyllabic also. Fürst and Delitzsch, by a supposed philosophical law of language, derive all the Semitic triliteral roots from biliterals with prefixes or suffixes, but they do not explain how these formatives lost their power after their first use. Hupfeld supposes that the triliteral stage was developed from the biliteral. Dietrich and Boetticher hold that this process was analogous to that by which derivatives are formed from the triliteral roots, and this theory certainly has some strong internal

evidence of correctness. But it may be a question whether these theories do not depend upon the strength of certain radicals and the weakness of others rather than upon any fixed system of development. It is obvious, when we see how easily the weak letters, such as the gutturals, are eliminated, and how hard it is to reduce a root consisting of three strong letters, that there may here be a confusion between change and development. Such a word as the Hebrew "yasad," "he placed," may be reasonably compared with the Sanskrit *sad*, our "sit," as the "y" is a weak letter, but is this loss of a weak letter, supposing the roots to be the same, enough to prove that the Hebrew form was originally without that letter? I should not strongly oppose theories so generally received were I not supported by the opinion of M. Renan, who, as plainly as possible, excludes them from the province of severely-correct philological inquiries. At the same time he admits that the biliteral roots of Hebrew show the greatest analogy to the roots of Indo-European languages, so that possibly the two races may have separated when their radicals were not completely developed and especially before the appearance of their grammar. But he wisely hesitates to proceed far on this dangerous path.—("Histoire des Langues Sémitiques," i., pp. 418, seqq.)

But supposing that we can reduce the Semitic languages to a primitive monosyllabism of biliteral roots, is this the same as Egyptian monosyllabism? The Egyptian monosyllables are not always biliteral; and even if we consider the expressed vowels not to be equivalent (though they really are) to certain of the Hebrew gutturals, we have still triliteral roots of three consonants. The probability that the supposed biliteral stage of Semitic is not to be considered the only condition in which it can be compared with Egyptian, is, however, rendered a certainty by the occurrence in the ancient form of the latter language of two triliteral roots absolutely the same as Hebrew ones of the same signification. These roots are in Egyptian PTEH "to open," and SHTEM or KHTEM, the first sign corresponding to SH and KH, "to shut;" in Hebrew פָּתַח Patah, and חָתַם Hatam. There can be no doubt whatever as to the meanings of the Egyptian words, and their relation to the Hebrew is rendered certain by their belonging to the same class in their significations. Both are found on early monuments, and PTEH is the name of the god of Memphis, and as such probably as old as the Egyptian language in its present form, certainly as old as its most ancient inscribed records. It is thus certain that, at the earliest date at which we know Egyptian,

at least 4000 years ago, it had triliteral roots, unmistakeably Semitic. We must, therefore, if we follow the safer course, compare the Semitic languages in their triliteral form, not in any supposed earlier form, with the Egyptian. It may be remarked that these two roots in the Hebrew seem especially to offer themselves to the operation of reduction. In Patah, the final letter is feeble, and we accordingly find it twice changed without a change of meaning in Hebrew itself; פָּתַח, פָּתַה, and פָּתַע unused; so that Fürst unhesitatingly reduces it to a root פָּת with a suffix ח. Hatam is still more easily reducible; it begins and ends with a feeble letter, but the guttural was the most likely to be additional, and therefore Fürst makes the root תָּם with a prefix חָ. Both these ingenious chemical operations become very doubtful when we find the words as monosyllables without any radical being dropped.

The presence in Egyptian of some words also found in Semitic must not lead us to conclude that their contact was at a time of which we have any monuments yet remaining. The Egyptian of 4000 years ago is the same as the Egyptian of the last century; and the latest Hebrew will be considered by sound criticism but little changed from the Hebrew of the patriarchal age. We cannot therefore suppose, on positive evidence, any gradual approach of the two languages. It is to be remarked that in the old Egyptian foreign Semitic words are usually written with a vowel expressed to each syllable, contrary to the usage with native words: thus, MAKATARA for Migdol, MARKABATA for merkabah (t); and that somewhat in the same manner Egyptian words cited in Hebrew are given in a Semiticized form: thus, Men-nufr (Memphis) becomes Moph and Noph; Shebek, Seva (So, A.V.). There is therefore no mutual assimilation of the two languages in the historical period.

In examining the Egyptian roots, no one can fail to notice some of biliteral form and others of triliteral with a medial vowel, which show a correspondence to Semitic roots that can scarcely be accidental. Bunsen has pointed out a few of these in the 4th volume of his Egypt's Place, but he left his fuller list unpublished. Some of these may, however, be equally traced in the Iranian languages to which other like roots also seem to point. But it does not appear to us that in either case there is a sufficient similarity to lead to any definite conclusion. Certainly the Arabic roots in Persian and Turkish are more important than the Semitic and Iranian possible correspondences to be traced in Egyptian.

In the formative part of Egyptian the case is wholly otherwise. In the isolated pronouns and those employed as verbal formatives as well as to give the possessive sense to nouns, there is not a similarity to Semitic, but a close relation to it. So remarkable is this relation, that in describing the Egyptian pronouns it would scarcely be incorrect to speak of them as Semitic, to use the easiest mode of explaining their character, just as it may be said of a Phœnician inscription that it is written in a Semitic character. In the derivative verbs we trace, however, a far less stable Semitic element. We can clearly determine a hiphil form and probably a niphal, respectively with H and N prefixed, but there are no other certain conjugations, save the reduplicated, common to Egyptian and Semitic. The reduplicated form has so non-Semitic an aspect that I scarcely venture to lay stress upon it. The other two forms, though traceable, seem to have lost their vitality before the time of the earliest records of Egyptian that we have. The particles have a resemblance to Semitic, but they are more primitive in being nouns still in use, or easily recognisable.

5. It must be admitted that Egyptian presents strong resemblances to Semitic, but that those resemblances are very unequal. Their discovery by Benfey, whose labours have been since carried on by Bunsen and Ewald, but more successfully by the former, has led to two theories of the place of Egyptian in relation to the Semitic family of languages.

Bunsen, firmly convinced of the single origin of language, and holding that its oldest form was purely monosyllabic, is forced to put the Egyptian further back in point of development than the Semitic. The presence of a strong Semitic element in the language makes it necessary, on his theory, that it should be an older stage of Semitic, a result which is clogged with this dilemma. The Asiatic descendant of Egyptian possesses one of its two elements, the Semitic; the African neighbours show the other, a foreign element. Why have the two thus had a separate existence for so many centuries? We can understand the continued existence of a dwarfed and unproductive offshoot of a language, as Egyptian might be thought to be of Semitic, but how are we to account for the division of a language into its two elements and the separate existence of these two elements, and of the language as a whole? Why, if Egyptian stand between pure monosyllabism and Semitism, have we no traces of Semitism in the monosyllabism of Nigritia, or in the Semitic languages of pure monosyllabism?

The cuneiform discoveries throw fresh light upon this curious

question. Sir Henry Rawlinson has shown that a monosyllabic or Turanian language, which he derives from Ethiopia, was spoken in Babylonia until supplanted by the neighbouring Semitic. Here, if anywhere, we must expect at least a trace of the supposed earlier stage of Semitic. On the contrary, the two languages, the Assyrian Chaldee and the Turanian of Babylonia, are wholly distinct, as, I believe, Semitic and Turanian always are. But upon this subject I trust Sir Henry Rawlinson will afford us clearer information than I am able to give.

I now come to the second theory, which supposes the two elements of Egyptian to be opposed, meeting like two different races in Egypt, and there intermixing. In support of this theory, which was first stated in a work edited by me, "The Genesis of the Earth and of Man,"* I must remark that no Semitic scholar of any weight has been found fully to accept the only other theory that seems possible, and, in particular, that M. Renan has brought all his ability to bear upon its refutation, I venture to think, with no little success. Semitic scholars hold that the two elements are never fused in Egyptian; that its pure monosyllabism is only mixed with the Semitic pronouns, and never could be more perfectly united. Their opponents challenge them to produce a parallel instance of a language which takes its roots from one source and its formative element in part from another. In reply, instances may be shown where the roots have wholly changed and the grammar remains the same, although no instance has been brought forward in which by borrowing, the complete set of roots of one language has been substituted for that of another.

This question is one of much broader import than would at first appear. If it be answered by the second theory I have endeavoured to state, a severe blow will have been dealt to the idea that all languages were gradually developed from the rudest beginnings. If we lose the imagined earlier stage of Semitism which Egyptian has been held to afford, we may well feel disposed to maintain the ancient theory, that civilized language, like civilization itself, was a gift of God to man, and to suppose that barbarous language sprang from a separate, perhaps a natural, source, rather than to hold that it indicates the first steps of a progress of which history affords not one corroborative instance.

* Second edition. Williams and Norgate, 1860.

ART. XII.—*Translations of the Hieroglyphic Writing on an Inscribed Linen Cloth brought from Egypt.* By SIR C. NICHOLSON, BART.

[*Read 5th July*, 1860.]

IN the year 1857 Sir Charles Nicholson returned to London after a visit to Upper Egypt, where he had made a large collection of objects of antiquarian interest, including several stelæ, sepulchral inscriptions, papyri, and inscribed linen cloth. Amongst the latter was one containing, in hieroglyphic writing, a part of the 129th chapter of the Book of the Dead. The document is itself of no particular interest. It presents a few new homophons. From the style of writing it is of an early date, and is probably of a period contemporaneous with the XVIIIth dynasty.

Sir Charles first showed this inscription to Mr. Birch of the British Museum, and was much struck with the facility with which that gentleman read its contents. Mr. Birch having given to Sir Charles a translation in writing, Sir Charles next forwarded the original document to his friend, the Rev. J. Dunbar Heath, of the Isle of Wight, requesting that he would favour him with *his* version of it also, and without intimating to him that the document had previously been submitted to the inspection of Mr. Birch; so that the Rev. J. D. Heath was, in point of fact, in entire ignorance of any previous effort having been made towards deciphering the document in question. In the course of a day or two the Rev. J. D. Heath favoured Sir Charles with his translation, and the respective versions of these two eminent Egyptologists are now published side by side. It will be perceived, that although there are some discrepancies, there is a remarkable general conformity in the sense conveyed by the two translations; and the experiment must be regarded as satisfactory and conclusive, in the highest degree, of the correctness of the data employed. It is inconceivable that any merely arbitrary and unfounded system could produce such a result as that here exemplified, which is given as a small illustration of the perfect reliability of the mode of interpretation of hieroglyphics now generally received and adopted. (C.N.)

Translation by Mr. Birch.

(The vignette represents the deities Isis, Horus, Khepera,

Translation by Rev. J. D. Heath.

(The figures represent Isis, Thoth, Kheper, and Mu, fol-

Gamu, followed by the deceased female, Tani, for whom the Ritual has been written. The text contains chapter 129 of the Ritual [Lepsius Todt. Taf. lii., c. 129]. It is preceded by a paragraph not in the Ritual.)

(Paragraph.) Say the gods who belong to the sun, Let Tani stand at the boat of the sun, coming out justified before Horus, who is in his disk; she is justified against all his enemies.

(Rubric.) The book of preparing a person so that he may stand at the boat of the sun with the gods who belong to him.

The Heron (Bennu) has gone to the East, Osiris to Tattu. I have opened the doors of the Nile; I have cleared the path of the sun; I have led (or drawn) Sochavis on his sledge; I have placed the crown (or asp) in its place; I have followed (Osiris); I have adored the sun; I have joined them who adore him; I am one of them; I was made second after Isis; I overcame their power; I knotted the cord; I turned back the Apophis; I made him to recoil. The sun gave me his hands. His satellites did not stop me. I prevail; the eye prevails also; Tani has separated, it is separated the egg and the fish.

(Rubric). This chapter is said over the representation which is lowed by the deceased woman, Tani.)

Hail ye Gods who accompany the Sun; Grant that the deceased Tani may embark in the sun's boat, may issue justified before Horus in his disk, and may be justified against his enemies.

(Then follows a portion of the 129th chapter of the Book of the Dead.)

The chapter on the strengthening of the soul, and the allowing it to embark in the boat of the sun with his companions.

I have ferried over the Phœnix to the East, and Osiris to Dadu; I have crossed the channels of the Nile; I have surmounted the route of the sun's disk; I have hauled Sokari into his barque, and paddled Ourti without delay; I have served, I have adored the disk; I am collected among his worshippers; I am one among them; I form the second with Isis; I paddle their souls across; I handle the oar; I have smitten the serpent; I have turned back his legs. The Sun has given me his arms, his opponents have not hindered me; and when I am engaged in sculling, his Sacred Eye sculls also; when the deceased Tani feasts, she feasts on eggs and the Abon fish.

This chapter is addressed to the wanderer in the picture, it

in the pictures; let it be written on a clean book, with the point of an emerald graver. Wash it in scented water, lay it on the knee of the dead, let it accompany his flesh. She is not turned away at the bask of the sun. Thoth clothes her when she comes forth. She is arrayed in pure linen.

is written upon a roll tinted with solution of colouring matter in liquid of Anti, which the soul has received upon its knees; it will never stumble with its limbs; she appears in the boat of the Sun; Thoth adores her on her appearance, walking in the garment of righteousness.

ART. XIII.—*Note on the Rèh Efflorescence of North-Western India, and on the Waters of some of the Rivers and Canals.* —By HENRY B. MEDLICOTT, B.A., F.G.S., Professor of Geology, Thomason College, Roorkee.

[*Read* 15*th December*, 1862.]

THE following notes, very nearly as they stand, were forwarded in July, 1861, by post to the late Colonel Baird Smith, for communication to the Royal Asiatic Society. The address got defaced in the mail-bags; and the parcel, after lying for several months in the Dead Letter Office, found its way back to Roorkee. My observations have thus forfeited the advantage of correction and criticism from one so experienced in the subject to which they relate. Meanwhile, I have had some hurried opportunities of seeing and hearing more, and can thus make some alterations and additions.—H. B. M.

I have recently made several examinations of waters and soils for the information of the navigation departments of the north-western provinces and of the Punjab. Though undertaken for a purely practical object, the question contains matter of general interest, and may thus deserve record in *The Journal of the Royal Asiatic Society*.

It will be seen that the following investigation is far from being so full as the importance of the subject might warrant. I have not had an opportunity myself of studying directly the phenomenon discussed, and have thus had to depend, for that part of the question, upon the somewhat scanty and unsystematic observations of others. As, however, I may not be able for some time to add to the information thus obtained, I give it as it is; the facts at least will be valuable, and their publication may elicit further investigation.

Rèh is an efflorescence that occurs extensively in the less elevated districts of the *doabs*. Of two samples examined by me from the district of the W. Jumna canals, one gave 76 per cent. of sulphate of soda, and 24 per cent. of chloride of sodium; the other gave only 4 per cent. of the latter salt to 96 of the former. The *rèh*, therefore, seems to be chiefly glauber salt with a varying

proportion of common salt. No doubt more numerous analyses would discover the occasional presence of other alkaline and earthy salts; indeed Dr. O'Shaughnessy gives a case in which the prevailing salt is carbonate of soda.

It would require very delicate experiments to determine at what precise proportion these salts begin to be prejudicial to vegetation. In the first of the samples alluded to the soil contained 30 per cent., and, in the second, 40 per cent. of *rèh*. But both these were collected off the very surface as samples of *rèh*, not of soil, and so they give no evidence on this point. The usual limit to the word *soil*, is the depth of ground worked up in cultivation. Among the specimens sent to Dr. O'Shaughnessy, we find the means of closer approximation. Two of those soils are given as containing but 5 and 8 per cent. of *rèh*, which, supposing it all sulphate of soda, would correspond to 2·8 and 4·5 per cent. of sulphuric acid. In both cases the ground was ruined for cultivation.

On the other hand it is well known that a certain amount of these salts forms a necessary element in all good soils. In combination with organic matter, the sulphates furnish some of the most nutritious classes of plants with their most nutritious elements.

I find from published analyses,[1] that a noted fertile soil may contain as much as 1 per cent. of sulphuric acid, a quantity far above that contained in the irrigation waters, the greatest proportion I found in these amounting to ·002436 per cent.

What brought this *rèh* into prominent notice was the fact that it was found to increase slowly but surely in the vicinity of the canals, under certain conditions. The extent of the destruction of good lands was so great that, in 1850, the subject was seriously considered by Government. Through the kindness of Colonel Turnbull, Superintendent of Irrigation, N. W. P., I am enabled to append extracts from the official correspondence on the subject.

In forwarding some samples to Calcutta for analysis, the Official General Superintendent of the Western Jumna Canal writes thus: October 1st, 1850.—"The attention of the civil and canal authorities in these parts has for a considerable period been directed to a change which is taking place in the soil in various parts of the country irrigated by these canals. A white efflorescence has made and is making its appearance in various places, destroying all vegetation with which it comes in contact. The barren space gradually increases in area, and speedily the ground thus affected is deserted by the cultivators, who forthwith assail the civil officers

[1] Art. Agricultural Chemistry. "Enc. Brit.," 8th edition.

with petitions for remission of revenue I trust I have supplied you with sufficient data for the elucidation of the following points:

"I. Whether the *rèh*, or natron, is entirely inherent in the soil, and evolved merely by the excessive use of water practised by cultivators irrigating from the canal; or whether the chemical properties of the water tend to create the noxious substance.

"II. The nature and quantity of substances hostile to vegetation existing in the various specimens of soil, and their comparative intensity in the several surface and corresponding subsoil specimens.

"III. Whether the waters taken from the Sorreput and Bhotuk districts has become impregnated with this poison during its course from the Jumna, and to an extent calculated to create the deposit of natron, and to deteriorate the produce of lands to which it may be delivered.

"IV. The nature of the repellant which destroys or neutralises the noxious elements contained in the soil, or held in solution in the water; and whether you can suggest any substance easily obtainable, and of so low a price as to be within the reach of cultivators; in other words, a practical remedy, partial or complete.

"V. Your opinion as to the probable increase or otherwise of the deterioration of soil under the following circumstances:

"*a.* As at present, unlimited water and scanty manure.

"*b.* Limited use of water and liberal nourishment to land.

"*c.* Abstinence from irrigation and manure.

"The subject is one of great interest in these times; when a great increase of canal irrigation is on the point of being given to the country."

The following is from Dr. O'Shaughnessy's memorandum in reply: 15 December, 1850.—"I give the results in rough, reserving details for a future communication if required.

"Waters:

"No. 1. Below Dadoopoor Bridge: is remarkably pure. It does not contain more than 1 part in 16,000 of solid matters and this chiefly a calcareous salt with traces of sulphate of soda.

"No. 2. Canal waters, Paneput district: still more pure than No. 1.

"No. 3. Contains $\frac{1}{8000}$ of solid matter, partly organic, partly saline, the salts being of lime and soda.

"There is nothing whatever in these waters which could prove prejudicial to crops of any kind.

"Subsoils:

"No. 1. Khotuk district: 2 feet below surface, yields saline matter 1 part in 500. This saline matter is composed of muriate and sulphate of soda and lime. No nitre or carbonate of soda.

"No. 2. Jagu, Paneput district: 2 feet deep; yields barely a trace of saline matter in 500 parts.

"No. 3. Boola, Kurnaul district: 1 foot below surface; not 1 part in 1,000 of saline matter.

"No. 4. Jooah, Paneput: 2 feet below surface; same as No. 2; little or no salt.

"From the above facts it is clear that there is nothing in the under-soil in question which could prove injurious to vegetation.

"Soils:

"No. 1. Rohtuk district. Saline matter 4·90 per cent.; chiefly common salt, sulphate of soda, and muriate of lime, a trace of nitrate of lime and soda.

"No. 2. Jagu, Paneput: saline matter 20 per cent.; carbonate of soda in abundance, with sulphate and muriate of soda and lime.

"No. 3. Boola, Kurnaul: saline matter 8·9 per cent.; chiefly sulphate of soda and common salt.

"No. 4. Jooah, Paneput: saline matter 22·80 per cent.; sulphate and muriate of soda and lime; little or no carbonate or nitrate of soda.

"Soil so strongly contaminated with saline matter, as the above results show to be the case, are unfit for cultivation.

"There is no chemical substance procurable, within the means of cultivators of any class, capable of neutralizing the deleterious effects of these saline matters.

"But, wherever drainage can be accomplished, the thorough working up of the surface soil, with abundance of water from the canal, will, if continued for a couple of seasons, dissolve and carry away the noxious salts. But the drainage must be efficient and rapid, otherwise the salt will merely dissolve, and be again deposited in the same place."

In these remarks Dr. O'Shaughnessy very clearly expresses, for all practical purposes, the very same facts that I have now arrived at, that the salt does not exist to an injurious extent in the irrigation water, nor in the sub-soil, and that it only exists at the surface. He, moreover, unhesitatingly pronounces that a special system of irrigation and drainage would *cure* the affected lands.

The data furnished to him did not admit of his saying more, and others did not follow up his statements to their legitimate conclusions. The question is still as much in debate among the canal officers as it was in 1850. I have now referred to me from the Baree Doab Canal the very same question that we have just seen answered by Dr. O'Shaughnessy for the case of the Western Jumna Canal; accompanying a sample from Mazby, the tail of the Lahore branch. It is dated, 5th July, 1861. "As the canal passes through a tract of land full of *kullur*, it is desirable to ascertain the quantity of this salt the water takes up." The notion expressed in this request is extensively believed among natives, and through them has found acceptance with a few Englishmen, who are blind enough to object to canal irrigation. It was to refute the supposition with facts that the analysis was asked for. There can be no better reason for offering the case for publication. Dr. O'Shaughnessy's analysis never got into print, and was unknown to the engineers of the Baree Doab Canal.

In endeavouring to account for the indecision I have pointed out, I think I have detected the one small link that was wanting to give full acceptance to Dr. O'Shaughnessy's recommendations. It is a link that, as I have said, he had not the means of supplying; and I may even add, that it is only apparently essential to the practical question at issue. It is this:—*Where does the rèh come from?* This is the question that I now find stopping the way. *The one fact,* that was eagerly accepted from Dr. O'Shaughnessy's report was, that the canal water was harmless;—a fact, however, qualified by the figures of the same document, showing the presence of sulphate of soda (the prominent element of rèh) in canal water. Thus, I find the Superintendent of the Western Jumna Canals, in stating the case to the civil authorities, writes, 30th January, 1851:—"The communication referred to distinctly settles this most important question. Mr. O'Shaughnessy not only states that the canal water in the Paneput districts, where the efflorescence is most abundant, is remarkably pure, and contains no matter in any way prejudicial to the crops which it irrigates, but actually recommends its use, in conjunction with a regular system of drainage, to free the country from the noxious salts which at present cover its surface."

Had Dr. O'Shaughnessy been able (or, perhaps, thought it necessary) to state, that drainage would *prevent* as well as *cure*,—that even a small decimal per centage would surely, and in no very long time, accumulate to 3 or 4 per cent., or more, according to the

circumstances of the ground in relation to evaporation and drainage —a definite opinion on the point would surely have long since been adopted and put in practice. This small want has for so long shaken confidence in the case and kept it in abeyance. It is still questioned whether the *rèh* cannot be mysteriously elaborated from the soil, or be brought from some unfailing store below ground.

Considering the many hundred miles of canal (principal and secondary) that have been constructed since 1850, it is a matter for most serious regret that so important a point should have been left in doubt.

The evil, however, went on increasing. In 1856–1857, Mr. Sherer, a civil officer, was deputed to report upon the affected districts, with a view to the reduction of the assessment. He gives a very distressing account of the poverty and disease produced by the noxious effects of the *rèh*, with its cause, upon the cultivation and upon the inhabitants; and he gives a long list of estates which are gradually advancing to a like state with the worst.

It is from Mr. Sherer's MS. Report (lent to me by Colonel Turnbull) that I have gathered some facts connected with the appearance of the *rèh*. The unexceptional fact that appears from these notes is the invariable association of *rèh*, canal, and swamp; at least this is the case with the lands *that have recently been impregnated*, and which were the object of Mr. Sherer's inquiries. Under the general name of *swamp*, I include not only ground actually under water, but also ground that is saturated immediately below the surface; what Mr. Sherer speaks of as "*choyul* or dry swamp."

For example:—"Bal Jatan. In land that is accessible to irrigation only by the process of *dal* (raising the water), the soil looked tolerably well in the central part, but as the slight elevation closed off towards the low lands again, the crops looked sickly and the colour of the soil indicated the presence of rèh." "I draw attention to the fact, that the lands where there is a slight rise above the general level of the estate are the only ones that enjoy anything like immunity from injury."

"Didwaree. Beautiful crops crown the high lands that rise from the sides of the canal, but as soon as the banks rise the land falls, and all appearance of cultivation passes gradually away."

Such is the uniform tenor of Mr. Sherer's observations. But he, too, seems to have been at the mercy of pure conjecture regarding the origin of the rèh; thus, after noticing some *kullur*-land (land that had of old been abandoned to the rèh), he exclaims,

"Where is the theory that this *rèh* is produced by excessive irrigation and *dofussli* farming? Here is land which has never been ploughed and never been irrigated, producing the noxious salts in far greater quantity and virulence than the cultivated lands of the same estate." I must not stop to notice the fallacy of this argument. I will presently consider the case of kullur-land.

Thus, then, the canal is the abundant cause of the swamping, either by the copious irrigation it affords, or by the unavoidable percolation through its bed raising the level of saturation for a considerable distance on each side; or, at least occasionally, by obstructing the natural drainage of the country. Mr. Sherer calls attention to two cases of this, thus:—"Boorshaum: this flood is also caused by the Munameh Rajbuha, which, running along the south of the estate, holds up all the water." "Munder: much swamp, particularly just round the village, by water held up by the Kusandhu Rajbuha," and with this swamping comes the *rèh*.

Now, then, we have got a proximate cause of the evil. It is a direct inference, that if the swamping is prevented, if the drainage is provided for, the *rèh* will not appear. It is only at the surface that we *can* control the water, so there is no choice of remedies. The only other remedy would be to remove the *cause* of swamping, *i. e.*, the stopping and clearing away of the canal, a remedy which of course no one will dream of.

If this point be fully established—and, as far as I have had the means of judging, it is inevitable—the investigation need not, for practical purposes, be carried further. The question that has for years kept the matter in abeyance seems to me, in a great measure, futile. It does not signify in the least whether the substance is in the water originally, or whether the water finds it in the ground below the surface, or even the imaginary case of its being evolved from the soil. The evident facts of the case go to prove, that the injurious accumulation of it is the slow result of prolonged concentration, of which the essential concomitant is swamping. A small amount of consideration further shows that the accumulation is due to evaporation from a surface which is, for a great portion of the year, more or less saturated with water, or which is almost or entirely dependant on evaporation for relief from drainage-water. Such is the state of the rèh land described by Mr. Sherer, upon whose observations I have chiefly to depend; they seem to have the merit of being unprejudiced in any way. The latter condition alone would be sufficient in time and without excessive flooding. It may, indeed, be said, that if the rèh comes from the canal water,

it would be desirable to reduce irrigation to a minimum. This would, no doubt, in many cases postpone the evil day, but no more. The other remedy, which is the very opposite of this one, would have to be adopted at last; so why not start with it?

As a matter of interest the question of the origin of the rèh is worth attention. As far as the facts before me are a guide, I am inclined to the opinion that the canal water is *the chief* source of the salt. I am now speaking of the lands newly affected.

The canal water is *a known* cause; it *must act* to its full extent; it affords an *inexhaustible*, an ever-renewed supply, and it may be adequate to the result. Let us put the case in its strongest light. It is *undeniable* that, supposing the soil, the subsoil, and the rock to be perfectly free from these salts, the very result before us would eventuate under the conditions described, and from the canal water alone. We have seen that a soil containing 30 parts of sulphuric acid in a 1,000 of soil produces barren rèh land. We may take 30 parts of sulphuric acid in 1,000,000 of water, by weight, as the quoted proportion contained in the canal water.

Taking 2 as the specific gravity of sulphuric acid, it would require an evaporation of 5,000 inches deep of water to convert 10 inches cube of soil into rèh soil. I have no authority for giving an approximate figure to the annual evaporation for this part of India; any one who has spent a hot season in upper India will allow that it must be very great. I am not, however, now aiming at exactness, but rather at a free illustration of the case; if, then, we take 10 feet, or 120 inches, as the annual evaporation, we should get rid of our 5,000 inches in about 40 years. Fifteen feet is the amount estimated by Massey for the tropical seas ("Physical Geography of the Sea," edition 1860, p. 37), where, be it remembered, the atmosphere is but little below the point of saturation. To this computation, moreover, a very large correction has to be applied in our case; a correction that will at least compensate for any exaggeration of the evaporation; we have been supposing the area to become impregnated by evaporation from its own surface only, a case that probably never occurs; it is almost a necessary condition of these low, swampy lands, that they should receive the washings of the surrounding area, it may be many times greater than that of the land actually destroyed. Mr. Sherer more than once calls attention to this fact of drainage water bringing *rèh* with it.

Something such as I have just described being a necessary process under certain conditions, it must be accepted as at least an

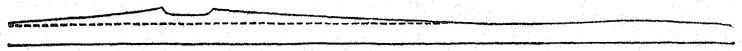
auxiliary cause when these conditions are seen to exist. The other cause assignable is the existence of a supply of these salts, more or less concentrated, at some depth below the surface, and from which the *rèh* is derived by the change produced by the canal in the water-circulation near the surface. In some parts of the country there seems to be little doubt of the presence of such a source: I will presently refer to it. When it exists to *any great extent*, it could not fail to be detected by proper observation.

The supposition vaguely put forward by some, that the elements of these salts exist, to the full extent, latent in the *soil*, and are developed by irrigation, is quite inadmissible. The assertion must be proved. No chemical operation could be simpler than to show the presence or absence of the ultimate components of these salts.

The very few facts we possess from the districts affected show a rapid decrease in the proportion of salt with increase of depth. At two feet below a surface containing 40 per cent. of salt, the subsoil contained but 0·167, and at four feet, only ·144 per cent.; corresponding to ·094 and ·081 of sulphuric acid;—a quantity less than might be expected in any clay,—a proportion, however, greater than that in the canal water. This latter fact, surrounded by the *opinion* that the necessary action of the water in percolating through the ground would be to reduce the salt in it to an equal proportion with that in the water, may be put forward as evidence that the quantity in the subsoil had formerly been greater than what has been found in the samples examined, and that it has in the process of percolation furnished the *rèh* at the surface. To such an argument I can only answer, that unless in cases where facts are brought to support the supposition, it is irrational to accept it in opposition to what I have shown to be, necessarily, at least a partial source. It is well known how retentive clays are of minute portions of these salts; it does not at all follow, because a clay gives up all its soluble ingredients when it is well powdered and freely washed in a beaker glass, that it would do so under the natural conditions we are discussing. Moreover, we know that the percolation of water through strata is very irregular, according to slight variations in the texture and composition of the rock.

What gives the most plausible encouragement to the notion that the *rèh* originates in the ground below the surface, and has only an indirect relation with the canal water, is the well-known fact that in many parts of the country, more particularly I believe, if not exclusively, along or near to the southern limits of the quondam alluvial deposits of the Gangetic plains, wells are fre-

quently sufficiently briny to afford an available supply of salt. Where such is the case, it would be natural to expect that any cause such as the canal (see diagram) which would bring this



briny water nearer and sufficiently near the surface, would result in saline effloresence. Here, too, we may demand of those who put this forward as a general cause, to the exclusion of the canal water, that they should bring some evidence of this being a general phenomenon. If it were so, evidence could not fail; a necessary concomitant would be, that in the canal *rèh* districts the well-water should be decidedly and universally more saline than the canal water. If such were the rule, or even frequent and to any *marked extent*, it could hardly fail to have been noticed in connection with the *rèh*. It may, however, be so slight as to be only discoverable by chemical means, as in the case at Roorkee, to be presently noticed. Were this cause very decided, we should also, I think, find the amount in the subsoil to be above the normal proportion instead of below it, as we have seen in the cases examined. Indeed, this cause would seem to be inadmissible, or but very subordinate, in many of the cases most insisted on by Mr. Sherer, when within a few dozen yards or less from the canal the lower ground is *rèh* land. Within this limit the water direct from the canal must largely predominate over any water contaminated from below.

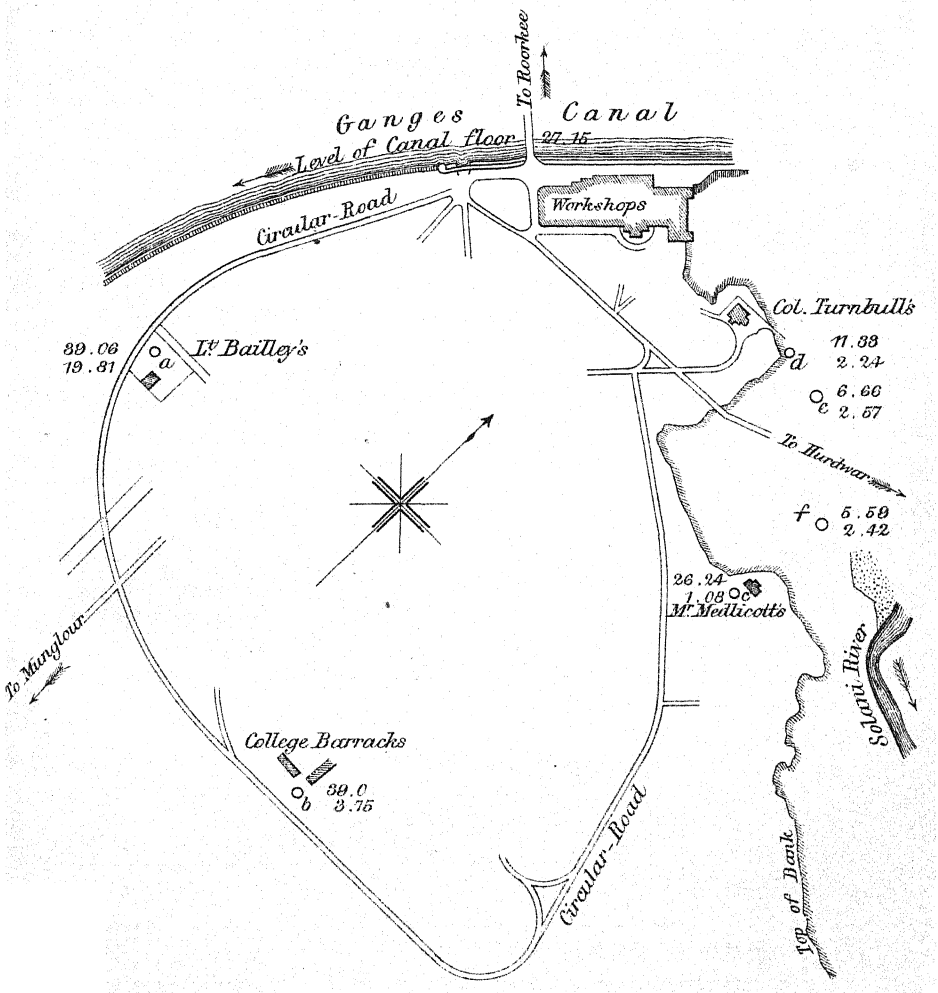
I have but one tolerably satisfactory observation to bear upon the question under discussion. Within the station of Roorkee *rèh* has made its appearance. This pretty and salubrious station is situate between the Ganges canal and the Solani river, at the southern angle of their intersection. It is built upon the ground that rises rapidly from the broad valley of the Solani. Some of the houses stand upon the very edge of this rise; in one case the garden is on the lower level, in the khadur of the Solani; it is the garden belonging to the Director of Irrigation, N.W.P. Eight years ago, and subsequently, the garden was not noted as less productive than others. Now, and latterly, it is markedly so, and the cultivation of it has been in some measure abandoned. *Rèh* shows plentifully on the surface; and at present, in the end of March, 1862, the water lies at a depth of only four feet. The actual amount of this *rèh* on and near the surface of the ground necessarily fluctuates greatly with the state of the weather; a smart shower would take away *excess*

of it down to the water level below, to be drawn up again by continued evaporation. Samples taken on the 8th April, 1862, gave in the soil scraped from the surface 2 per cent. of *rèh*: in 4 inches cube taken from and *including* the surface, there was but 0·4 per cent.; and in the subsoil at the water level but 0·2 per cent. of the dried sample. The water in the garden-well (*d*, pl. V) gave but 0·007 per cent. To compare with this, I examined the water of three other wells: the relative position of each is exhibited on the accompanying plan; showing also the levels of the ground and of the water in each, reduced to the level of the masonry floor of the Solani, under the aqueduct. The level of the canal-floor and of some other points are also given. The level of the water in the wells is more or less affected by the constant drawing of water; this is very marked in the well *c*. The usual depth of water in the canal is from six to eight feet. The results are shown together in Table A. The wells *a*, *b*, and *c*, are distant from the canal 500, 4,000 and 3,500 feet; in each the water is well removed from any sensible influence of surface evaporation; and in each the amount of *rèh* is but slightly different from that in the canal water; rather *less* than *more;* but the difference is within the limit of variation in the canal water itself. The well *d* is between the canal and *c*, at 1,400 feet from the canal. In it the amount is more than trebled; it stands in *rèh* land: this amount would no doubt be greater were there free communication with the ground immediately around; it is a pucka well, the masonry walls going several feet below the water level.

TABLE A.—Parts in 10,000, by weight.

	Ganges Canal.	Well *a*.	Well *b*.	Well *c*.	Well *d*.	Surface *d*.	Soil *d*.	Subsoil *d*.
Sulphates ..	0·1745	0·2441	0·0174	0·0417	0·347	155·0		
Chlorides ..	0·0357	0·0122	0·0953	0 0837	0·349	145·0		
Totals ..	0·2102	0·2563	0·1127	0·1254	0·696	200·00	40·00	20·00

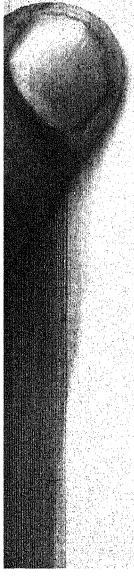
The evidence of this case seems to me very strongly in favour of the supposition I have advanced. It cannot be reasonably maintained that the subterranean conditions at *d* are different from those at *a*, *b*, and *c*. The superficial features are due to a totally different class of causes from those by which the strata were formed. It would be beyond the limits of probability that a saline deposit



PART OF ROORKEE STATION.

N.B. The upper figure refers to the ground and the lower one to the water level, reduced to the level of the masonry floor of Solani at aqueduct.

Scale. 1.200 Feet One Inch.



should occur below *d*, and not at the other places. Even in superficial conditions the well *c* is but slightly different from *d*, being but 200 feet from the edge of the Solani khadur. The water levels in *a*, *b*, and *c*, as well as in *d*, are affected by the rise and fall in the canal, so that any saline deposit below should contaminate all equally, yet it is only in *d* that any such action is marked. I cannot avoid concluding that the *rèh* at *d* has been accumulated from canal water, or *at least from a solution of no greater strength*, which is the chief point in debate. Although there is no increase apparent in the *total* soluble matter in the well-water as compared with that of the canal, this table shows a very marked but perhaps local change in the *constitution* of these salts: the chlorides seem to increase at the expense of the sulphates. In the *rèh* itself this is most marked; the common salt in this *rèh* is three times as much as the glauber salt. This chemical reaction must be due to the salts in the ground; but it is only a change of kind, not of quantity, and is as marked at *b* and *c* as at *d*.

This example corroborates those already given as to the mode of action of the soil; that it is at the very surface that the accumulation takes place, and that the mischief is done. A fair sample of the soil, only to the depth of four inches even, shows an amount of *rèh* well below the normal useful proportion for a soil, and still less in the subsoil; it seems to be the undue activity, mobility, and concentration given to these energetic salts by the constant damp condition of the ground, assisted by the intensity of atmospheric action, that makes them so injurious. It may, indeed, be questioned if the injury done in this case is not due to the water alone, and not to the poisonous influence of the salts. However, it is *rèh* land.

In a former part of this paper, when computing the possible period of growth of *rèh* land from canal water, I took 10 inches cube of soil with 3 per cent. of sulphuric acid, as the standard of *rèh* soil, but in the case just given we have all the symptoms of *rèh* land, produced by a quantity of *rèh* below what we know may exist with advantage in a soil. This complicates the question of cure not a little. It seemed possible to reduce a large excess of soluble salts by free irrigation, with rapid removal of the water; it would not be at all so easy to deal with so small a proportion as we have just shown may act with serious effect; the first water that touches it carries it into the soil, and its proportion there is so small that the water has very little power to remove it. At the same time these results give us strong hopes of the effects of persevering drainage, without the troublesome and wasteful process

of flooding. In the well *d*, which, as I said, is protected from the ground near the surface by impervious walls, we still find the water considerably charged with *rèh;* if this water were compelled to move on, the circulation must, even without the assistance of irrigation, reduce the *rèh* within harmless limits, but this action will be somewhat slow: an obvious fact which makes its adoption as a preventive the more urgent. The further investigation of the question ought to show the depth from the surface at which the water's level begins to influence the surface in this way, with due attention to the circumstances of soil, exposure, and contour.

I do not at all wish to put forward this mode of origin of the *rèh* as universal. There can be little doubt but that in many parts of the country the ground is, to some extent, overcharged with salts, but I am pretty well convinced that in many cases the cause is what I have described. It would be a matter of much importance to be able to distinguish the several causes; for the remedy, though the same for all, should be adopted accordingly. When the cause is purely superficial, it might be sufficient to maintain a very moderate amount of circulation in the drainage water, at but little below its natural level, especially if the remedy were adopted in time; whereas in the case of a subsoil charged with salts, it would be necessary to keep the water level well below that depth at which it comes within the influence of atmospheric changes. If this cause existed in a marked degree, it would evidently be hopeless to attempt to keep it down by ensuring the moderate washing of the few upper inches of soil. I believe that the examination of the subterranean water will always enable us to detect this cause. The whole subject is one that calls for judicious experiment.

The existence of *kullur* land long before the canals were constructed, and in places where the canal water can never reach, has greatly contributed to maintain the doubts as to the formation of *rèh.* I have scarcely any analyses or field observations to guide me in discussing this point, but there are some general considerations that seem to me of much weight. In localities where the river and the well water is sweet, as is the case in some kullur districts, and where in consequence the ground cannot be largely impregnated with salts, is it not a physical impossibility that the surface, which once or twice a year gets well drenched with rain water, should remain charged with highly soluble alkaline salts if the drainage be efficient? May we not then conjecture that these *kullur* lands are natural areas of inefficient drainage—lands more or less dependent upon evaporation for the removal of surface waters? For this it is

not necessary that they should always be the lowest parts of the country; upland hollows present the same conditions. Under these conditions *rèh* would slowly accumulate, whether from an original small excess in the soil itself, or aided by contributions from the higher ground around. The difference between *kullur* land and canal *rèh* land is, that in this there will be no limit to the accumulation, unless carried off by drainage.

I would again remark, that this attempt to find the origin of the *rèh*, is of little direct consequence to the question of its prevention or cure. In every case noticed, which are, I confess, but few, we have seen that, immediately below a surface copiously charged with it, the amount present was below what may be considered desirable in a good soil. Wherever the *rèh* comes from, drainage is the only and the efficient cure.

I wish, also, to repeat, that my views as to the common origin of the *rèh* have been adopted from small evidence (as the reader may judge), and in opposition to the universal opinion of those connected with the canals. Some of the objections offered present, I confess, grave difficulties to my theory. For instance, an experienced canal officer writes—"I have seen what appeared to me to be *rèh* on the edge of high baugur land, with a drop of some 30 feet to the khadur below." It would require very peculiar conditions to make this a case of inefficient drainage, but it is not impossible. We have seen what a very small total proportion of salt in a soil is sufficient to produce a *rèh*-surface. Again, I am told that, on the very edge of a drainage cut, there may sometimes be seen a line of *rèh* efflorescence ("stratum of *rèh*"). This fact *may* be but an illustration of my argument; this line may have been a more porous band of subsoil, in which percolation was just sufficient to keep the exposed sectional surface damp, and along which, therefore, evaporation would concentrate any soluble element. Every one may have noticed such bands of percolation in natural and artificial sections. At all events, these examples illustrate the uselessness (? mischief) of observations isolated in time and from surrounding circumstances, and without the object of testing some particular hypothesis.

When passing through Lahore in February last, I made some incomplete observations upon the *rèh* land about Anurkullee; some of the facts are puzzling. I cannot say what the relations of the ground are with regard to *thorough* drainage, but *rèh* showed freely on plains where the *surface* drainage was complete, as, for instance, along the sides of the road, where it runs in embankment several

feet high by the ground selected for the new Horticultural Gardens. In the low ground close by, I picked up some facts that may illustrate this and other difficulties. In the lowest parts of the hollow area, there was a *rich* crop of young wheat growing. It was irrigated from a well in the centre. In several parts of the field there were small patches white with *rèh*, and with nothing growing on them, though they had evidently been tilled and sown; they were a few inches higher than the surrounding surface, and were thus removed from the irrigation. Three inches cube of soil (including the surface) taken from one of these patches, gave the very high proportion of 3·8 per cent. of *rèh* in the air-dried soil. A few yards off, among the wheat, a similar quantity of soil gave the very low proportion of 0·2 per cent. Having no other facts to guide me, I can only make the following surmises: from the very small proportion of salt in the irrigated ground, I conclude the water to be tolerably pure, evidently sufficiently so for advantageous irrigation. The amount of *rèh* due to the whole area, cannot be anything like that found on the isolated patches; the same process that removes the *rèh* from the general surface to distribute it temporarily through the subsoil, effects its special accumulation on these spots; they remain dry from day to day, and the results of evaporation can thus accumulate, the supply being constantly renewed at the expense of the common stock, which, on the whole is not probably an abundant one. The appearance of *rèh* on higher places, as on the roadside, may be due to the same action. The phenomenon reminded me of that often seen when a saline solution is allowed to dry up in a vessel, the salt seems as it were to creep up the sides.

This *rèh* contained 88 per cent. of sulphates, 7 per cent. of chlorides, and 5 of other salts.

On the whole, we cannot but look forward to canal irrigation as the cure for all this. It places a powerful agency within our control. It would be especially applicable when it can be brought to bear upon the more elevated *kullur* lands. In those more parched districts of Upper India, it seems to me doubtful if such lands ever get a thorough soaking from the surface to the water level below; there is no such thing as natural subsoil drainage. The first few drops of rain dissolve all the surface salts, and are soaked into the ground; the dash comes; as much as can runs off, nearly as pure as it falls, as far as soluble ingredients are concerned; and the rest is dissipated before enough has been absorbed to establish a free connection with the water-stratum below. Thus,

time after time, the same *kullur* makes its appearance. Free irrigation, with drainage, would very soon catch it and dispose of it.

Such, at least, are the opinions suggested to me by the cursory and indirect examination I have been able to give to the subject. I subjoin tables, showing the results of some experiments on the contents, in solution and suspension, of the water of these rivers and canals.

TABLE B.—Showing the principal soluble ingredients in 10,000 parts of water.

Locality..	1. Ganges, Hurdwar.	2. Ganges Canal, Roorkee.	3. Ganges Canal, Roorkee.	4. Jumna, Fyzabad.	5. E. J. Canal, 96th mile.
Time of collection	13 June, 1861.	22 May, 1861.	4 July, 1861.	1 June, 1861.	1 June, 1861.
Carbonate of lime .	0·4731	0·57	(?) 0·57	0·1600	0·4285
Sulphates	0·10293	0·1747	0·12507	0·2428	0·0914
Chlorides	0·00539	0·0357	0·00232	0·0174	0·1500
Totals ..	0·58042	0·7804	0·69739	0·4202	0·6699

Locality..	6. E. J. Canal, 96th mile.	7. Ravee, Madhopore.	8. Ravee, Madhopore.	9. Baree Doab Canal, Neazbeg.	10. Thames, Twickenham.
Time of collection	1 June, 1861.	See *note*.	See *note*.	5 July, 1861.	
Carbonate of lime .	0·2142	0·4514	(?) 0·4514	0·4357	1·97
Sulphates	1·1462	0·2042	0·4325	0·14244	0·38
Chlorides	0·8440	0·0285	0·0348	0·01832	0·25
Totals ..	2·2044	0·6841	0·9187	0·59646	2·60

NOTE.—A gallon of water was operated on in each instance. The sulphates and the chlorides are estimated as soda salts, which they were proved to be almost entirely in some cases, by more complete analysis. No. 6 is given as a warning in collecting; two gurrahs of the water were sent, filled at the same time and in the presence of the canal officer; in checking the analysis from the second vessel, I found this enormous discrepancy. I repeated the analysis to make sure of the fact; the second gurrah must have been independently charged with salts. The sample No. 7 was collected in bottles on the 1st and 18th September, 3rd and 15th

October, 15th November, and 1st and 15th December; No. 8 on the 15th January, 1st and 15th February, 15th March, and 15th April. I have given an analysis of Thames water for comparison. I made a more complete analysis of one example as a clue to the others. The water from Neazbeg, the tail of the Lahore branch of the Baree Doab Canal, gave in 10,000.

Silica	·0114
Carbonate of lime	·3700
Carbonate of magnesia	·0657
Chlorine	·0113
Sulphuric acid	.0801
Lime	·0368
Magnesia	trace
Soda	·0310

The water from the College well (*b*, Table A) also showed a trace of lime and magnesia in the portion dissolved in water after evaporation.

The analyses in this table are not numerous enough, nor accompanied by sufficient collateral observations, to exhibit any rule in the variations indicated in the proportions of the soluble ingredients of water taken at the same place at different times, or at about the same time, from different places on the same stream. These variations most probably depend upon the prevailing changes of the weather as causing rainfall or evaporation, and consequent dilution or concentration of the water. The canals receiving little or no drainage water below the heads would probably exhibit this very markedly; thus, the decided decrease in No. 9 as compared with Nos. 7 and 8, may be due to rainfall on or before the 5th of July, for the highly soluble salts, the sulphates and the chlorides, any means of supply that might have originally been present in the ground cut by the canal would have been rapidly washed away, giving an example on a large scale of what may be done with it in detail. An increase in the carbonates, as seems indicated by 4 and 5, might continue for an indefinite time, if the stream passed over much *kunkur*, the process of solution being very slow.

TABLE C.—Silt Estimates, parts in 10,000.

No.	Date	Hurdwar	Asufgurh	Roorkee	
1	4 May, 1856 ..	2·03	·33	3·37	
2	1 May, 1857 ..	·09	..	1·28	
3	1 May, 1858 ..	..	..	..	
4	22 May, 1861 ..	..	..	3·82	
5	5 June, 1856 ..	6·05	7·34	5·19	4 feet of water at Roorkee
6	10 June, 1857 ..	6·88	..	2·75	4 feet of water at Roorkee
7	1 June, 1858 ..	3·41	..	3·85	
8	13 June, 1861 ..	13·65	..	..	
9	4 July, 1856 ..	14·50	8·00	11·79	
10	4 July, 1857 ..	10·45	..	5·17	
11	2 August, 1856	23·10	13·30	26·10	
12	2 August, 1857	17·93	..	5·83	
13	2 Sept., 1856 ..	6·89	81·00	7·66	
14	1 Sept., 1857 ..	5·39	..	..	
15	4 Oct., 1856 ..	clear	..	·85	
16	1 Oct., 1857 ..	1·98	..	1·00	
17	5 Nov., 1856 ..	·61	3·30	2·20	6·5 feet of water at Roorkee
18	1 Nov., 1857 ..	·44	..	..	
19	1 Dec., 1856 ..	·20	1·43	·55	
20	1 Dec., 1857 ..	clear	..	1·32	
21	1 Jan., 1857 ..	..	·45	1·67	
22	1 Jan., 1858 ..	clear	..	1·32	
23	1 Feb., 1857 ..	1·02	·12	1·26	
24	1 Feb., 1858 ..	..	..	..	
25	1 March, 1857..	..	1·27	·99	
26	1 March, 1858..	..	..	..	
27	1 April, 1857 ..	·37	·45	·82	
28	1 April, 1858 ..	..	..	..	

Table C.—Hurdwar is where the Ganges leaves the Simalik hills to enter upon the plains; the stream is much more rapid there than lower down. Asufgurh is on the Ganges, about eighteen miles below Hurdwar. Roorkee is eighteen miles below Hurdwar, on the Ganges Canal. These estimates are of course exclusive of the soluble ingredients. If the single series of estimates from Asufgurh for 1856—1857 can be trusted, they seem to indicate approximate equality with Hurdwar during the period of low water; a very decided diminution during the period of greatest flood, involving a very considerable deposition along the bed and low branches of the river below Hurdwar, and a marked increase about the rise (from snow-water) and fall, before and after the rains in the mountains have charged the river with sediment, the lower reach of the river thus preying on its muddy banks. No. 13, from Asufgurh, may be questionable, for all the samples from there I had to depend upon a native messenger.

The proportion of silt in the canal water at Roorkee, as compared

with the head, seems to depend upon the depth of water, producing either silting-up or erosion.

Some cases in Table D show how very indefinite such silt-estimates must sometimes be; samples collected by myself at same time, in same way, and with equal care, showing a difference of a third.—See 6 and 7.

TABLE D.—Occasional Silt Estimates, parts in 10,000.

No.	Date.		
1	4 July, 1856 ..	Solani at Roorkee, a 3 feet flood	47·30
2	16 July, 1856 ..	„ „ 3·5 feet flood	93·90
3	19 July, 1856 ..	„ „ 6 feet flood	80·00
4	19 July, 1856 ..	„ „ same time as No. 3 ..	87·10
5	22 Sept., 1856 ..	„ „ 5·5 feet flood	68·50
6	31 July, 1857 ..	„ „ 9 feet flood	228·80
7	31 July, 1857 ..	„ „ same time as No. 6 ..	148·50
8	1 June, 1861 ..	Jumna, at Canal head	1·04
9	10 June, 1861 ..	„ „	3·05
10	1 June, 1861 ..	E. Jumna Canal, 96th mile	10·50

2nd May, 1862. H. B. MEDLICOTT.

ART. XIV.—*On the Súrya Siddhánta, and the Hindú Method of Calculating Eclipses.* By WILLIAM SPOTTISWOODE, M.A., F.R.S., &c.

[*Read 19th January*, 1863.]

Some years ago it was suggested to me to undertake an edition and translation of the Súrya Siddhánta; but a long and careful study of the work convinced me that it would be impossible satisfactorily to accomplish the object without more assistance than was to be found in Europe. The MSS. were few and insufficient in accuracy; the lexicon was deficient in most of the technical terms; and the only works that threw any light upon the subject were those of Colebrooke, invaluable as far as they went, and the Abbé Guérin's Astronomie Indienne. The other writers who had touched upon the subject merely reproduced what was to be found in Colebrooke.

Mr. Hall's edition in the Bibliotheca Indica, and Mr. Burgess' elaborate translation and notes, published by the American Oriental Society,[1] now seem to leave little wanting upon the subject. But for those who wish to comprehend the nature, and estimate the real value, of the Hindú astronomical methods, without entering more deeply than necessary into the complexities of either text or commentary, it may still be useful to present the processes in as compendious a form as possible. I have therefore attempted to translate into modern mathematical language and formulæ the rules of the work in question.[2] The text, like all Sanskrit works, gives no account whatever of its rules or methods; and as the explanations of the commentators, being of comparatively recent date, have little or no interest for the history of the science, it appeared to me foreign to the present purpose to retain them. Under these circumstances I have contented myself in the case of exact formulæ, with occasionally adding a few of the steps necessary for verification; and in the case of approximate, with pointing out what assumptions are involved in the rules which they express. It should be added that, the assumptions so indicated are not

[1] Journal of the American Oriental Society, vol. vi, pp. 145—498.

[2] These rules are contained in Chaps. I—VI. To the remaining chapters the process is not applicable.

necessarily identical with, although in some sense equivalent to, those originally made by the author of the treatise.

From such observations as they were able to make, the Hindús deduced values for the mean motions of the sun, moon, and planets, supposed to revolve about the earth, and of their apsides and nodes. By means of these values they calculated back to remote epochs, when, according to their data, there would have been a general conjunction of parts or of the entire system.

The following is an outline of the process of calculating a lunar eclipse. First find the number of days elapsed from the commencement of the age, or period, to the mean midnight next before the full moon for which an eclipse was to be calculated. The original determination of the mean motions had of course given the current year of the period. This being done, an easy arithmetical process gave the mean longitude of the sun, the moon, and the moon's apsis.

The process of correction, whereby the true longitudes were thence deduced, is curious and peculiar. It had been noticed that the apsides, or points of slowest movement, and the positions of conjunction with the sun had proper motions. These were attributed to influences residing in the apsides and conjunctions respectively; and corrections due to each were accordingly devised. The undisturbed orbit was considered a circle with the earth (E) in the centre; and upon it the centre of a smaller circle or epicycle moved with a uniform angular velocity, equal, but opposite in direction, to that of the undisturbed planet; so that M being the centre, and m any given point on the epicycle, M m always remained parallel to itself. If then at the apsis, or conjunction (according as the correction of one or of the other was being calculated), M m was in a straight line with E m, the true position of the planet was conceived to be at the point where E m cut the undisturbed orbit. The radius moreover of the epicycle was variable; and its magnitudes at the odd and even quadrants being determined so as to satisfy observation, its intermediate variation was considered proportional to the sine of the mean anomaly.

The true longitudes and daily motions of the sun and moon having been found, the interval between mean midnight and the end of the half month, or moment of opposition in longitude, or middle of the eclipse is then determined. But since the Hindú time is reckoned from true sunrise to true sunrise, it is next required to determine the interval between mean midnight and true sunrise. This is effected by means of (1) the equation of time, found by a

simple but rather rough method; (2) the precession, of which more below; and (3) the ascensional difference.

The diameters of the sun, moon, and shadow, are found on the principle that their true are to their mean diameters, as their true are to their mean motions.

Lastly are determined the moon's latitude at the middle of the eclipse; the amount of greatest obscuration; the duration of the eclipse; of total obscuration (if it be total); and the times of first and last contact of immersion and emergence; by methods which do not require particular notice apart from the details themselves.

SURYA SIDDHANTA.

Chapter I.

On the Mean Motions of the Planets.

The divisions of time are as follow (vv. 11, 12):—

10 long syllables	=	1 respiration (= 4 seconds),
6 respirations	=	1 vinádí,
60 vinádí	=	1 nádí,
60 nádís	=	1 day.

Those of the circle are the same as ours (v. 28).

The civil day is reckoned from sunrise to sunrise, and for astrological purposes a month consists of 30 such days, and a year of 12 such months.

The astronomical day is the interval from midnight to midnight.

The lunar month is the interval from one new, or full, moon to the next. It is divided into 30 lunar days, which of course do not correspond with civil days. The lunar month is named after the solar month in which it commences. When two lunar months begin in the same solar month, the former is called an intercalary month, and both bear the same name. The civil day is named after the lunar day in which it ends; when two lunar days end in the same civil day, the former is "omitted," and both bear the same name (see also vv. 34–40).

The solar year is sidereal, and the zodiac is divided into 12 signs, to each of which corresponds a solar month (vv. 12, 13).

The following is the composition of the "Great Age," an imaginary period (vv. 15–17):—

	Solar Years.	Solar Years.
Dawn	144,000	
Krita Yuga	1,440,000	
Twilight	144,000	
Total ..		1,728,000
Dawn	108,000	
Tretá Yuga	1,080,000	
Twilight	108,000	
Total ..		1,296,000
Dawn	72,000	
Dvápara Yuga ..	720,000	
Twilight	72,000	
Total ..		864,000
Dawn	36,000	
Kali Yuga	360,000	
Twilight	36,000	
Total ..		432,000
Total of Great Age		4,320,000

Furthermore, the Kalpa (कल्पः) is thus composed (v. 18, 19):—

	Solar Years.	Solar Years.
Dawn	..	1,728,000
71 Great Ages	.. 306,720,000	
1 Twilight ..	.. 1,728,000	
1 Manvantara	.. 308,448,000	
14 Manvantaras		4,318,272,000
1 Kalpa ..		4,320,000,000

The Kalpa is a day of Brahma. His night is of the same length; and his age consists of 100 years, each of 360 such days and nights. The total duration is 311,040,000,000,000 solar years (vv. 20, 21).

The following is a computation of the time from the commencement of the Kalpa to the end of the present Treta Yuga (vv. 21–23):—

	Solar Years.
Dawn of current Kalpa	1,728,000
6 Manvantaras	1,850,688,000
27 Great Ages	116,640,000
Treta Yuga	1,728,000
	1,970,784,000
But from the elapsed portion of the present Kalpa there must be deducted the time occupied in creation (v. 24, see also vv. 45–47)	17,064,000
	1,953,720,000

In their daily westward motion the planets lag behind the fixed stars each by the same absolute mean distance, viz., 11,858,717 yojanas (योजनः); and their angular motion is inversely as the radius of the orbit. The initial point of the sphere is the end of the constellation Revatí (vv. 25–27).

[The principal star of Revatí is said to be 10′ W. of the above-mentioned point, and is supposed to be ζ Piscium.]

The numbers of revolutions of the planets, &c., are as follow (vv. 29–34, 41–44):—

	In a Great Age. Revolutions of the Planets.	In a Kalpa. Apsides.	Nodes.
Sun	4,320,000 ..	387	
Mercury	17,937,060 ..	368	488
Venus	7,022,376 ..	535	903
Mars	2,296,832 ..	204	214
Jupiter	364,220 ..	930	174
Saturn	146,568 ..	39	662
Moon:—			
Sidereal rev.	37,753,336		
Apsis	488,203		
Node	232,338		

From the foregoing data the following results are deduced (vv. 34–40):—

	In a Great Age.
Sidereal days	1,582,237,828
Deduct solar revolutions	4,320,000
Civil days	1,577,917,828

Sidereal solar years	4,320,000
	12
Solar months	51,840,000
Moon's sidereal revolutions	57,753,336
Deduct solar revolutions	4,320,000
Synodical revolutions (lunar months) ..	53,433,336
Deduct solar months	51,840,000
Intercalary months	1,593,336
Lunar months × 30 = lunar days ..	1,603,000,080
Deduct civil days	1,577,917,828
Omitted lunar days..	25,082,252

In order to find the number of civil days that have elapsed since the creation, or any other given epoch, to a given date, proceed first as in vv. 23, 24. Then (vv. 48–51) let—

Y = No. of years to end of last Kṛita Yuga,
y = ,, since Y,
m = complete solar months since y,
d = lunar days elapsed of current month.

Then the required number of lunar days

$$= 30\Big(12\,(\mathrm{Y}+y)+m\Big)\Big(1+\frac{1593336}{51840000}\Big)+d$$

$$=\Big(12\,(\mathrm{Y}+y)+m\Big)\frac{2226389}{72000}+d.$$

And the corresponding number of civil days

$$=\Big\{\Big(12\,(\mathrm{Y}+y)+m\Big)\frac{2226389}{72000}+d\Big\}\Big(1-\frac{25082252}{1603000080}\Big)$$

$$=\Big\{\Big(12\,(\mathrm{Y}+y)+m\Big)\frac{2226389}{72000}+d\Big\}\frac{394479457}{400750040}.$$

Suppose the planets were arranged in the order of their supposed distance from the Earth, viz., Saturn, Jupiter, Mars, Sun, Venus, Mercury, Moon. The first hour of the first day of the first month of the first year was assigned to the Sun; and so on for all the

other hours in the order given above. The succession for the days, months, and years will consequently fall as follows:—

Hours.	Days.	Months.	Years.
1	$1 = 7 \times 0 + 1$	$1 = 7 \times 0 + 1$	$1 = 7 \times 0 + 1$
2	$25 = 7 \times 3 + 4$	$31 = 7 \times 4 + 3$	$361 = 7 \times 51 + 4$
3	$49 = 7 \times 7$	$61 = 7 \times 8 + 5$	$721 = 7 \times 103$
4	$73 = 7 \times 10 + 3$	$91 = 7 \times 13$	$1081 = 7 \times 154 + 3$
5	$97 = 7 \times 13 + 6$	$121 = 7 \times 17 + 2$	$1441 = 7 \times 205 + 6$
6	$121 = 7 \times 17 + 2$	$151 = 7 \times 21 + 4$	$1801 = 7 \times 257 + 2$
7	$145 = 7 \times 20 + 5$	$181 = 7 \times 25 + 6$	$2161 = 7 \times 308 + 5$

Hence the following scheme of arrangement of planets, days, months, and years:—

	Hours.	Days.	Months.	Years.
1	Sun	Sun	Sun	Sun
2	Venus	Moon	Mars	Mercury
3	Mercury	Mars	Jupiter	Saturn
4	Moon	Mercury	Saturn	Mars
5	Saturn	Jupiter	Moon	Venus
6	Jupiter	Venus	Mercury	Moon
7	Mars	Saturn	Venus	Jupiter

Hence, to find the planet of the day we have only to find the remainder of D (or the number of days) $\div 7$, and the planet opposite the corresponding place in the days column will be the planet required. Now the positions of the planets in the day column being of the form D, those in the month column are of the form $2D + 1$, and those in the year column of the form $3D + 1$. Hence, q implying quotient, and r remainder, the formulæ for finding the planet corresponding to a given—

$$\text{Day will be } \left(\frac{D}{7}\right)_r,$$

$$\text{Month ,, } \left(\frac{2\left(\frac{D}{30}\right)_q + 1}{7}\right)_r,$$

$$\text{Year ,, } \left(\frac{3\left(\frac{D}{360}\right)_q + 1}{7}\right)_r.$$

The mean place of the planets at any given time (No. of days elapsed = D) is given by the formula $\frac{DR}{C}$, where—

R = No. of revolutions in an age (vv. 53–4),
C = No. of civil days in an age.

To find the current year of the cycle of Jupiter (60 years); if J be the number of past revolutions and signs of Jupiter—

$$\text{Current year} = \left(\frac{J}{60}\right)_r.$$

The above method gives the mean places of the planets, &c., for the prime meridian (through Ujjayiní); we now proceed to find them for any other meridian (vv. 59, 60)—

Let ρ = radius of Earth = 1600 yojanas,
l = latitude.

Then $\rho\sqrt{10}$ = circumference of equator,
$r\sqrt{10}\cos. l$ = circumference of parallel, whose latitude is l.

Let t, t' be the calculated and observed lines of immersion and emersion of a total lunar eclipse, then the correction for longitude (and latitude) expressed in yojanas (vv. 63–65)

$$= \frac{(t \sim t')\, r\sqrt{10}\cos. l}{60} = (t \sim t')\cos. l \frac{80\sqrt{10}}{3}$$

And if n be the planet's mean daily motion, the mean position for the meridian of the place will be—

$$\frac{DR}{C} \pm \frac{n\,(t \sim t')\, r\sqrt{10}\cos. l}{60r\sqrt{10}\cos. l} = \frac{DR}{C} \pm n\frac{t \sim t'}{60}$$

And, if t'' = time before or after midnight expressed in nádís, then the planet's mean position at that time will be expressed by (v. 67)—

$$\frac{DR}{C} \pm \frac{nt''}{60}$$

The orbits are however inclined to the elliptic as follow (vv. 68–70):—

	°	′
Moon	4	30
Mars	1	30
Mercury	2	0
Jupiter	1	0
Venus	2	0
Saturn	2	0

Chapter II.

On the True Motions of the Planets.

The planets are advanced or retarded, or diverted in latitude, in various degrees, from their mean positions, by agencies situated in their apsides, nodes, &c. (vv. 1-14). To determine their true positions, a Table of Sines is necessary. The intervals of arc for which the sines are calculated are 225′; then, if s, s', s'', be the sines of 225′, $2\times225'$, $3\times225'$, we have the following rule for calculation:—

$$s = 225'$$

$$s' = s + s - \frac{s}{s}$$

$$s'' = s' + s - \frac{s}{s} - \frac{s'}{s}$$

And the Table given as the result of these formulæ (although from the 7th to the end some modifications have been made) is (vv. 15-27):—

Arc.	Sine.	Arc.	Sine.	Arc.	Sine.
° ′	′	° ′	′	° ′	′
3 45	225	33 45	1910	63 45	3084
7 30	449	37 30	2093	67 30	3177
11 15	671	41 15	2267	71 15	3256
15 0	890	45 0	2431	75 0	3321
18 45	1105	48 45	2585	78 45	3372
22 30	1315	52 30	2728	82 30	3409
26 15	1520	56 15	2859	86 15	3431
30 0	1719	60 0	2978	90 0	3438

It must be remembered that the sine is a line, not a ratio, and consequently that sin. 90° = radius.

The sine of any arc not an exact multiple of 225′ is given by the formula (vv. 31-33)—

$$\text{sin. } (n\,225' + \theta) = \frac{\theta\,(\text{sin. } (n+1)\,225' - \text{sin. } n\,225')}{225'}.$$

Similarly the arc might be found from the sine.

If S be the Sun, N its node, and N S H a spherical triangle right angled at H, the Sun's declination D (= S H) is given by the equation (v. 28):—

$$\text{R sin. D} = \text{sin. S N sin. S N H.}$$

The corrections of the mean longitudes are made by means of epicycles, the magnitudes of which vary in different parts of the orbit. The dimensions are expressed in arcs of the orbits to which they belong, as follow (vv. 34-38):—

Planet.	Circumference of Epicycle			
	Of Apsis		Of Conjunction	
	At even Quadrant.	At odd Quadrant.	At even Quadrant.	At odd Quadrant.
	°	° ′	°	°
Sun	14	13 40	..	..
Moon ..	32	31 40	..	..
Mercury ..	30	28 0	133	132
Venus ..	12	11 0	262	260
Mars ..	75	72 0	235	232
Jupiter ..	33	32 0	70	72
Saturn ..	49	48 0	39	40

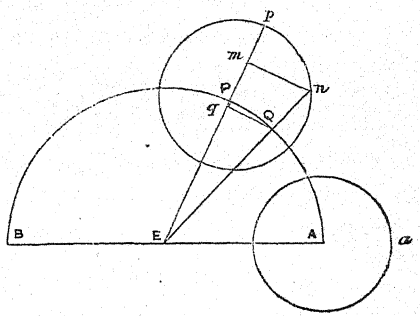
Let e_0, e_1, be the magnitudes of the epicycle at the even and odd quadrants respectively, expressed as above, $\delta\epsilon$ the correction to be applied to e_0 for any point whose mean anomaly is nt; let R = radius of circular orbit; then—

$$\frac{\delta\epsilon}{e_1 - e_0} = \frac{\text{sin. } nt}{\text{R}},$$

and the circumference of the epicycle e at that point is—

$$e = e_0 - \frac{\text{sin. } nt}{\text{R}}\,(e_1 - e_0).$$

The following is the calculation of the correction for the apsis (v. 39). Let E be the Earth, and A P B the undisturbed circular orbit; A a the radius of the epicycle at A, P p the radius of the epicycle at P; draw n m, Q q, $\perp^r$ to E p. The movement is represented by supposing the epicycle to move with its centre on the circle A P B, without revolving about its centre. Consequently, the radius A a, or its equivalent P n, is parallel to E A; in other words, $\angle\ p\ \mathrm{P}\ n = \angle\ \mathrm{P\ E\ A} = \theta$. The point Q, in which E n cuts the circle A P B, is the true position of the planet; and P Q is the correction sought.



Since the circumferences of circles are as their radii,—

$$\frac{360^\circ}{e} = \frac{\text{sin. Q}}{\text{sin. } p\ \mathrm{P}\ n};$$

And when, as in the case of the epicycles of the apsis, e is small, we have approximately—

$$m\ n = q\ \mathrm{Q} = \text{arc P Q}.$$

Hence the correction for the apsis—

$$\delta\ \theta = \frac{e}{360^\circ}\ \text{sin. } \theta.$$

But if, as in the case of the conjunction, the epicycle is not small, we have (vv. 40-42)—

$$\frac{\mathrm{E}\ n}{n\ m} = \frac{\mathrm{E\ Q}}{\mathrm{Q}\ q},\quad \mathrm{E}\ m^2 + m\ n^2 = \mathrm{E}\ n^2.$$

Hence, if $\delta_1\ \theta$ be the correction for the conjunction,—

$$\text{sin. } \delta_1\ \theta = \mathrm{Q}\ q = \frac{m\ m}{\sqrt{\mathrm{E}\ m^2 + m\ n^2}}\ \mathrm{R}.$$

The correction for the apsis is the only one required for the Sun and Moon. For the other planets, calculate (1) the correction of conjunction, and apply half of it to the mean place; thence (2) calculate that of the apsis, and apply half of it to the place already corrected; thence (3) calculate that of the apsis afresh, and apply it to the original mean place of the planet; and lastly, thence (4)

calculate that of the conjunction, and apply it to the last place (vv. 43-45).

The part of the equation of time, depending upon the difference between the Sun's mean and true places, is given in minutes by the formula (v. 46)—

$$\frac{\odot\text{'s equation} \times n}{3600'}$$

To calculate the correction δn of the mean daily motion n of a planet due to the influence of the apsis; let ν be the mean motion of the apsis, then—

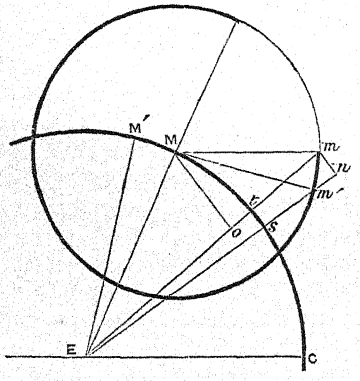
$$\delta \text{ sin. } \theta = \frac{(n - \nu)\ \delta \text{ tabular sin. } \theta}{225'};$$

Also, if $\mathfrak{s}$ be the arc of the epicycle (e), corresponding to θ in the orbit,—

$$\frac{360^\circ}{e} = \frac{\delta \text{ sin. } \theta}{\delta \text{ sin. } \mathfrak{s}} = \frac{\delta \text{ sin. } \theta}{\delta n};$$

Whence—

$$\delta n = \frac{e}{360} \frac{(n - \nu)\ \delta \text{ tab. sin } \theta}{225}.$$



To calculate the corresponding correction $\delta_1 n$, due to the influence of conjunction (vv. 50, 51). In the following figure—

Let E be the Earth,
M' M the correct daily motion of the centre of the epicycle at M',
m' m points in the epicycle corresponding to m' m.
Make E n = E m;
Join M m, and M m';

Then in the △s M m t, ∠ M t m = r t ∠, ∴ M m t = 90° − m' m t
$m c' m'$, ∠ m o' m' = r t ∠ = m m' o,
∴ the △s are similar.

And since the epicycle is small compared with the orbit, we have approximately t s = o' m'.

$$\therefore \frac{o'\ m'}{m\ m'} = \frac{t\ m}{\text{M}\ m} = \frac{t\ s}{m\ m'},$$

$$\therefore \frac{t\ s}{t\ m} = \frac{m\ m'}{\text{M}\ m} = \frac{\text{M}\ \text{M}'}{\text{E}\ \text{M}}.$$

The text, however, substitutes E m for E M in the above expression without explanation; so that—

$$\delta_1 n = \mathrm{M}\ \mathrm{M}' \frac{t\ m}{\mathrm{E}\ m}.$$

When the commutation in the final process of 43-45 is between the following limits, the motion becomes retrograde (vv. 52-55):—

Mercury	..	144°	to	215°
Venus ..	..	163°	,,	197°
Mars ..	..	164°	,,	426°
Jupiter ..	..	130°	,,	230°
Saturn ..	..	115°	,,	245°

To find the latitude of a planet (vv. 56-58). Subtract from the mean place of the planet, corrected for the apsis only, that of its node; then, if—

V = distance of planet from its node,
L = extreme, or greatest latitude,
l' = latitude at mean distance R,
l = ,, true ,, r;

We have for the Moon—

$$l = l^1 = \frac{\mathrm{L\ sin.\ V}}{\mathrm{R}};$$

And for the other planets—

$$\frac{r}{\mathrm{R}} = \frac{l'}{l}, \text{ whence } l = \frac{\mathrm{L\ sin.\ V}}{r}.$$

This is to be added to or subtracted from the declination, neglecting the difference between arcs measured on secondaries to the equator and ecliptic.

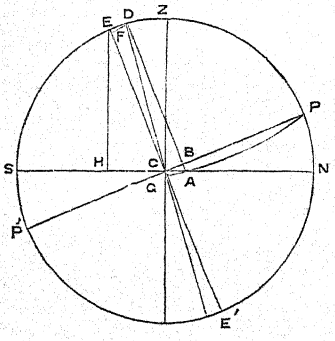
The day and night of a planet, or the interval of its passing twice over the same meridian, differs from a sidereal day and night by a quantity thus found. Each sign contains 1800′; then, if p = number of respirations occupied by the passage of the sign, in which the planet is, across the meridian (determined in chapter iii), the quantity required (v. 59)—

$$\frac{np}{1800'}.$$

The radius of the hour circle (v. 60)

$$= \mathrm{R\ cos.\ D} = \mathrm{R} - \mathrm{R\ vers.\ D}.$$

To find the length of the day of a planet, or the time during which it is above the horizon (vv. 61-63). In the following figure—



Let N P Z S represent the meridian of an observer at C,
P P′ the N. and S. poles,
E E′ the points of the meridian cut by the equator.
E D the declination of the planet.
Draw D B A parallel to E C,
E H $\perp^r$ to N S,
P A G the arc of a great circle through P and A.
Then the Δ s, A B C, C H E, are similar.

$$\therefore \frac{EH}{HC} = \frac{CB}{BA} = \frac{g}{s}.$$

And— $$CB = DF = \text{sin. D.}$$

Hence— $$AB = \frac{S \text{ sin. D.}}{g}.$$

But the arc, of which A B is the sine, is the same part of the diurnal circle that the arc, of which C C is the sine, is of the equator.

$$\therefore \frac{AB}{BD} = \frac{GC}{CE},$$

which determines G C. And the arc, of which G C is the sine, is the measure in time of the difference between a quadrant and the arc of a diurnal circle intercepted between the horizon and meridian.

The ecliptic is divided into 27 lunar mansions, each of which consequently contains 800′. Hence, in order to find in what mansion a planet is at any given time, let θ = its longitude.

$$\text{No. of complete mansions traversed} = \left(\frac{\theta}{800'}\right)_q.$$

$$\text{Portion traversed by current mansion} = \left(\frac{\theta}{800'}\right)_r.$$

$$\text{No. of days elapsed} = \frac{1}{n}\left(\frac{\theta}{800'}\right)_r.$$

A lunar day is $\frac{1}{30}$ of a lunar month, or of the interval in which the moon gains 360° in longitude on the Sun. It is therefore measured by $\frac{360}{30}° = 12° = 720'$. Hence we may find the number of lunar months and days elapsed by proceeding as above with a divisor 720′.

The yoga (योगः) (y) is the period during which the longitudes of the Sun (θ) and of the Moon (θ_1) together amount to the space of a lunar mansion (v. 65).

$$\therefore \frac{\theta_1 + \theta}{800'} = \text{No. of yogas passed} + \text{portion of current yoga}$$

$$= qy + z \text{ suppose.}$$

Then if n, n_1, be the daily motions—

$$\frac{60z}{n_1 + n} = \text{nádís elapsed of current yoga.}$$

Similarly for the lunar days (d_1)—

$$\frac{\theta_1 - \theta}{720} = qd_1 + z,$$

$$\frac{60z}{n_1 - n} = \text{nádís elapsed of current lunar day.}$$

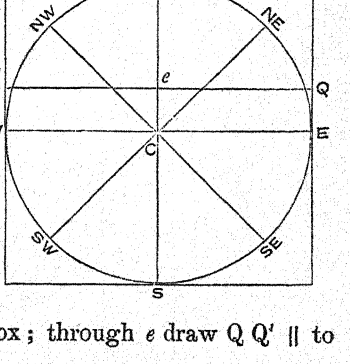
Each lunar day is divided into two halves (करणः), which have particular names and portions assigned to them. But they appear to have no practical use.

Chapter III.

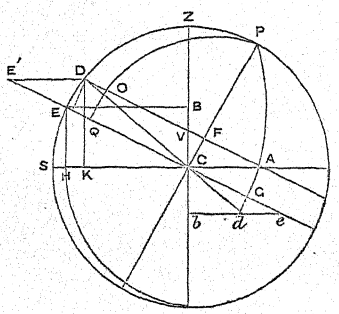
On Direction, Place, and Time.

To construct the dial (vv. 1–7).

Describe a circle; at its centre erect a gnomon 12 digits high. Mark the two points where in the forenoon and afternoon the extremity of the shadow meets the circle. From each point as a centre, with the distance between them as a radius, describe two circles; the line joining their points of section will be a N and S line. By similar processes draw E and W, NE and SW, NW and SE lines. Draw a circumscribing square, and mark off the sides passing through the E and W points in digits. Let e be the extremity of the shadow at noon, when the Sun is on the equinox; through e draw Q Q' ‖ to E W.



Then (v. 8) if g = height of gnomon,
h = length of hypothenuse,
s = ,, equinoctial shadow,
$h^2 = g^2 + s^2$.



In a yuga the sidereal circle lags behind on the zodiac 600 revolutions. And the position x of the initial point of the sphere at any period is consequently given by the following proportion:—

When d = No. of days elapsed,
d_1 = ,, in a yuga,
$$\frac{d_1}{d} = \frac{600 \text{ rev.}}{x}$$

But it is an oscillatory movement and has periods and changes of sign like a sine; only the range instead of being 90° is
$$\frac{90° \times 30}{10} = 27°.$$
The annual precession consequently
$$= \frac{365 \times 360° \times 360}{4320000 \times 365} \frac{3}{10} = 54''.$$

In the accompanying figure let (vv. 12–25)

C b	represent the gnomon	$= g$,
$b\,e$	,, equinoctial shadow	$= s$,
$b\,d$	,, any other ,,	$= s'$,
C e	,, equinoctial hypothenuse	$= h$,
C d	,, any other ,,	$= h'$,
C E	,, radius	$= \mathrm{R}$,
$d\,e$	,, measure of amplitude	$= a_1$,
Z	,, zenith,	
S	,, south point.	

Then if the Sun be upon the equator—
$$\text{sin. } l = \text{B E} = \frac{\mathrm{R}\,s}{h},$$
$$\text{cos. } l = \text{C B} = \frac{\mathrm{R}\,g}{h}.$$

If it be not on the equator—
$$\text{sin. Z} = \text{B E},$$
$$\text{sin. A} = \text{C B},$$
$$\text{and } 90° - \text{L} = \text{Z} \pm \text{D}.$$

Similarly from the above equations we may find the shadow or hypothenuse for a given latitude or declination.

The true and mean longitudes may be found, when the latitude and declination are known, by an inversion of the processes of ii 28–30.

If a represent the Sun's amplitude, then C A = sin. a; and from the similar △s C b e, C F A, we have—

$$\text{sin. } a = \frac{h \text{ sin. D}}{g}.$$

Also from the similar △s C d e, D C A, we have—

$$a_1 = \frac{h \text{ sin. D}}{g} \frac{h'}{\text{R}};$$

$$\text{and } s' = s \pm a_1.$$

Returning to the figure—

Z C will be the projection of the prime vertical,

V ,, ,, point where the Sun passes it.

Then V C = sin. A.

And generally $\text{sin. A} = \frac{\text{R } g}{h}$.

Now since the △s V C F, E C H are similar,

$$\text{sin. A} = \frac{\text{R sin. D}}{\text{sin. } e}.$$

Hence if h'' be the value of the hypothenuse when the sun is on the prime vertical—

$$\frac{\text{sin. D}}{\text{sin. } e} = \frac{g}{h''}.$$

Also since—

$$\frac{\text{sin. } l}{\text{cos. } l} = \frac{s}{g}$$

$$\therefore h'' = \frac{s \text{ cos. } l}{\text{sin. D}}.$$

Again, since the △s H E C, F C A are similar—

$$\text{sin. } a = \frac{\text{R sin. D}}{\text{cos. } l}.$$

Whence (v. 28) $a_1 = \frac{h^1 \text{ sin. } a}{\text{R}}$.

To find, for a given declination and latitude, the sine of the Sun's altitude at the moment when it crosses the SE or the SW vertical circle.

Suppose that the plane of the above figure is turned about C Z as an axis through 45°, so that Z D E S represents an arc of SE, or

of a SW circle. Then $b\,e = \sqrt{2}\,s$, $D\,E' = \sqrt{2}$ sin. a. The altitude is then given by the formula—

$$\text{sin. A} = \pm\frac{2\,s\,g\,\text{sin. }a}{g^2+2\,s^2} + \sqrt{\frac{(B^2-2\,\text{sin.}^2 a)\,g^2}{g^2+2\,s^2} + \frac{4\,s^2\,g^2\,\text{sin.}^2 a}{(g^2+2\,s^2)^2}}.$$

To verify this, form the quadratic equation in sin. A—

$$(g^2+2\,s^2)\,\text{sin.}^2\text{A} - 4\,s\,g\,\text{sin. }a\,\text{sin. A} + 2\,g^2\,\text{sin.}^2 a - \text{R}^2 g^2 = 0,$$

or

$$2\,(s\,\text{sin. A} - g\,\text{sin. }a)^2 - g^2\,(\text{R}^2 - \text{sin.}^2\,\text{A}) = 0,$$

or, referring to the figure—

$$(b\,e\,.\,\text{D K} - \text{C}\,b\,.\,\text{D E}')^2 - \text{C}\,b^2\,\text{C K}^2 = 0.$$

But

$$\frac{\text{C K} + \text{D E}'}{\text{D K}} = \frac{b\,e}{\text{C}\,b}, \text{ or } b\,e\,.\,\text{D K} - \text{C}\,b\,.\,\text{D E}' = \text{C K}\,.\,\text{C}\,b,$$

which renders the equation identical.

If the declination be south, D E′ falls in the opposite direction: hence the double sign.

To find the sine of the Sun's altitude at any hour, when its distance from the meridian, the declination, and the altitude are known (vv. 34-36).

In the same figure as before, let O be the projection of the Sun's place at any time, and P O Q that of an arc of a great circle; P A G that of another.

Then—

C G = sine of ascensional difference = sin. a.
E Q = versine of hour angle = versin H.
O R = sin. A.
R_1 = radius of diurnal circle.

Then—

$$\text{sin. A} = (\text{R} + \text{sin. a} - \text{versin H})\,\frac{\text{R}_1}{\text{R}}\,\frac{\text{cos. }l}{\text{R}}$$
$$= \frac{\text{G Q}\,.\,\text{F D}\,.\,\text{E H}}{\text{C E}^2}.$$

But—

$$\frac{\text{E H}}{\text{C E}} = \frac{\text{O R}}{\text{O A}} \text{ and } \frac{\text{D F}}{\text{C E}} = \frac{\text{G Q}}{\text{A O}} \quad \therefore \frac{\text{G Q}\,.\,\text{F D}\,.\,\text{E H}}{\text{C E}^2} = \text{O R}.$$

In a given latitude to find the Sun's declination, and thence its

true and mean longitude from the shadow at any hour (vv. 40-61). It was shown above that—

$$\frac{h}{a} = \frac{\text{E C}}{\text{C A}} = \frac{\text{E H}}{\text{F C}}$$

$$\therefore \text{F C} = \text{sin. D} = \frac{a \text{ cos. } l}{h}.$$

To describe on the dial the path of the extremity of the shadow for any day, set off three bases in the forenoon, noon, and afternoon (y-co-ordinates); calculate the distances E. and W. (x-co-ordinates); and draw a circle through the three points. This represents the path required (vv. 41, 42).

To determine the time occupied by each sign in rising. First for a point on the equator. Let R_1, R_2, R_3 be the day radii of 1, 2, 3 signs respectively. Then if t_1, t_2, t_3, be their time of rising, and s_1'', s_2'', s_3'' the number of seconds in 30°, 60°, 90° respectively; then—

$$\text{sin. } t_1 = \frac{R_3 \text{ sin. } s_1''}{R_1}, \quad \text{sin. } t_2 = \frac{R_3 \text{ sin. } s_2''}{R_2}, \quad \text{sin. } t_3 = \frac{R_3 \text{ sin. } s_3''}{R_3}$$

For the two sets of quantities (s_1'', s_2'', s_3''), (t_1, t_2, t_3), being measured, one on the ecliptic, and the other on the equator, form respectively the hypothenuses and bases of three rt. $\angle$d $\triangle$s; and by ordinary spherical trigonometry—

$$\text{sin. } s'' = \text{cos. } s_1'' \, t_1 \text{ sin. } t_1 = \frac{R_1}{R_3} \text{ sin. } t_1.$$

For the next three signs the expressions will be the same as these, only in an inverse order; and so on for the other six. For a point not on the equator we must add (or subtract) the ascensional difference.

Given the Sun's longitude and the local time, to find the points of the ecliptic on the horizon and on the meridian (vv. 46–49).

The preceding method gives the ascensional equivalents for the various signs; and for the portions of signs, in which either the Sun or the horizon is, we have $\frac{\delta \, s_2''}{\delta \, t_2} = \frac{s''}{t_2}$.

A similar process will give the local time at which any given point on the ecliptic will be upon the horizon (vv. 50, 51).

Chapter IV.

On Eclipses.

The diameter of the Sun = 6,500 yojanas (v. 1).
" Moon = 480 "

Let, as before, n, n_1, represent the mean, and n' n_1', the true daily motions of the Sun and Moon respectively; then—

$$\text{Corrected diameter of the Sun} = 6500\,\frac{n'}{n},$$

$$\text{" Moon} = 430\,\frac{n_1'}{n_1}.$$

In order to find the apparent diameters in minutes of arc, the corrected diameter of the Sun is projected on a circle at the Moon's mean distance, by multiplying the expression by the ratio of the Sun's revolutions in an age to those of the Moon, or by that of the Moon's to the Sun's orbit. At the distance in question $1' = 15$ yojanas (vv. 2–3).

$$\text{Corrected diameter of the Earth} = 1600\,\frac{n_1'}{n_1}.$$

To find the diameter of the Earth's shadow upon the Moon's mean orbit. Project the difference of the Sun's and the Earth's corrected diameters on the Moon's orbit, and subtract the result from the Earth's corrected diameter (vv. 4, 5). The formula is—

$$1600\,\frac{n_1'}{n_1} - \left(6500\,\frac{n'}{n} - 1600\,\frac{n_1'}{n_1}\right)\frac{480}{6500}.$$

Calculate the longitudes of the Sun and Moon at midnight next preceding or following the opposition or conjunction; then, if an eclipse be probable, calculate the interval to the instant of opposition or conjunction, by the methods of Chapter II (vv. 6–9).

If r_1, r, be the radii of the eclipsed and eclipsing bodies, and l_1 the latitude of the former, the amount of the obscuration is given by the formula (vv. 6–11)—

$$r_1 + r - l_1.$$

The times of duration of the eclipse, and of total obscuration will be expressed by (vv. 12, 13)—

$$2\sqrt{(r_1 \pm r)^2 - l^2} \times \frac{60}{n_1 - n},$$

60 being the number of nádís in a day.

This method assumes that the latitude remains unchanged during the eclipse; but if greater accuracy is required, with the above formula as a first approximation recalculate both longitude and latitude of the Moon; and repeat the process as often as desired (vv. 14, 15).

The instant of true opposition or conjunction is considered as the middle of the eclipse (vv. 16, 17).

If from the formula of vv. 12, 13, corrected by vv. 14, 15, we subtract any interval of time (t), and reconvert the remainder into arc, we may regard the result as the perpendicular, and the latitude as the base of a right-angled triangle; the hypothenuse will then represent the amount of obscuration at the time t. In the case of a solar eclipse, a correction for parallax during its continuance must be made. This is explained by Chapter V, vv. 14–17 (vv. 18–21). Conversely we may require to know when the obscuration will attain to a given amount. The method, being similar to those given above, need not be given in detail (vv. 22, 23).

In projecting an eclipse (a process which is explained in Chapter VI), the eclipsed body is represented in the centre of the figure with a N. and S. line, and an E. and W. line drawn through it as co-ordinates, or lines of reference. The N. and S. line represents a great circle drawn through the N. and S. points of the horizon; the E. and W. line a small circle parallel to the prime vertical. The position of the ecliptic is fixed by calculating, first, the angle (v) between the E. and W. line and the circle of diurnal motion; and secondly, the angle (w) between the latter circle and the ecliptic.

For the first process let P be the pole of the equator, M the eclipsed body, N the north point of the horizon. Then

$$\text{P N} = l, \quad \text{M P N} = 180° - \text{hour angle} = 180° - \text{H}.$$

If M were on the horizon and at the E. or W. point, then P M and N M would be quadrants, and P M N $= v$. It is, however, assumed that the same relations would remain approximately unchanged for other positions of M; hence for the triangle P M N, we have—

$$\frac{\text{sin. M P N}}{\text{sin. M N}} = \frac{\text{sin. P M N}}{\text{sin. P N}}, \text{ or } \text{sin.}\, v = \frac{\text{sin. H sin.}\, l}{\text{R}}.$$

Secondly, it seems supposed that the diurnal circle and the equator meet at 90° from M; hence moving M to a point M′, 90° forward

on the ecliptic, the declination of M′ will measure the angle between the ecliptic and the diurnal circle.

The sine of the deflection $(v+w)$ so found is laid off on a straight line on the scale of radius = 49 digits; *i.e.*, 3438 ÷ 49 = 70, or 70′ = 1 digit.

To take account of the apparent increase of heavenly bodies near the horizon; it is assumed that 3′ at the horizon are equivalent to 4′ at the zenith. Hence it is calculated (v. 26)—

$$\frac{\frac{1}{2}\text{ day}}{1'} = \frac{\text{altde. in time}}{\text{excess over } 3'}$$

Whence the rule—

$$\text{Equivalent of digits in minutes of arc} = \frac{\text{alt. in time} + 3\frac{1}{2}\text{ days}}{\frac{1}{2}\text{ day}}.$$

Chapter V.

On Parallax in a Solar Eclipse.

When the Sun is on the meridian, it is considered that there is no parallax in longitude. When the latitude is equal to the declination, there is none in latitude (v. 1).

The first step towards finding the parallax at the moment of conjunction, is to determine the sine of amplitude of the point of the ecliptic on the eastern horizon (vv. 2, 3). For this purpose, let D_1 = the greatest declination; then, adopting the notation hitherto used, we have by ii, 28—

$$\text{R sin. D} = \text{sin. } \theta \text{ in. sD}_1,$$

And by iii, 22, 23—

$$\text{sin. } a = \frac{\text{R sin. D}}{\text{cos. } l};$$

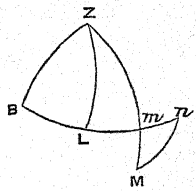
Whence—

$$\text{sin. } a = \frac{\text{sin. } \theta \text{ sin. D}_1}{\text{cos. } l}.$$

To find the sines of the Z D and altitude of the point of the ecliptic having the greatest altitude (vv. 4-6),—

Let $Z' =$ meridian Z D,
$C_1 =$ Z D of point in question,
$A_1 =$ Altitude ,,

Then if, in the spherical triangle Z B L, Z be the zenith, Z L a meridian, Z L $\perp$ to the ecliptic B L, and M n the arc of a great circle from M to the pole of the ecliptic,



Z L $= Z'$,
Z B $= Z_1$,
Z L B $\doteq 90° -$ B Z L, approximately,
$m\,n =$ parallax in longitude,

And—

$$\frac{\text{sin. } z_1}{\text{sin. } z'} = \frac{\text{sin. Z L B}}{\text{sin. Z B L}} = \frac{\text{sin. Z L B}}{R} = \frac{\text{sin. } (90° - a)}{R} = \frac{\sqrt{R^2 - \text{sin.}^2 a}}{R}$$

And— $$\text{sin.}^2 Z_1 + \text{sin.}^2 A_1 = R;$$

Whence—

$$\text{sin. } Z_1 = \sqrt{\text{sin.}^2 z' - \frac{\text{sin.}^2 z' \ \text{sin.}^2 a}{R^2}}$$

$$\text{sin. } A_1 = \sqrt{R^2 - \text{sin.}^2 Z_1}.$$

But (v. 7) we may approximately take $Z_1 = z'$.

To find the parallax in longitude (vv. 7-9). The Moon's greatest horizontal parallax = 4 nádís. Hence the proposition—

$$\frac{\text{sin. Z } m}{\text{M } m} = \frac{R}{4}.$$

But— $$\frac{\text{sin. Z } m}{\text{M } m} : \frac{\text{sin. B } m}{n\,m} = \frac{\text{sin. } A_1}{R}$$

$$\therefore \frac{\text{sin. B } m}{n\,m} \cdot \frac{\text{sin. } A_1}{R} = \frac{R}{4}.$$

But $\frac{R}{2} = \text{sin. } 30°$; hence—

$$\text{Parallax in longitude} = \frac{\text{sin. B } m}{\text{sin.}^2 30° \div \text{sin. } A_1}.$$

[The term used in the text seems rather to imply L m, instead of B m.]

The formula must be used to correct the time of conjunction previously found; the parallax must then be calculated afresh, and the process repeated.

To determine the parallax in latitude (v. 10), we have only to substitute, from the formulæ—

$$\text{Sun's greatest parallax} = \frac{n}{15}$$

$$\text{Moon's} \quad ,, \quad = \frac{n_1}{15},$$

the quantity $\frac{n_1 - n}{15}$ for 4 in the equation $\frac{\text{sin. Z } m}{\text{M } m} = \frac{\text{R}}{4}$; whence

$$\text{Parallax in latitude} = \frac{(n_1 - n)\ \text{sin. Z}_1}{15\ \text{R}}.$$

This formula may be simplified for calculation by the following considerations (v. 11):—

$$n_1 - n = 731'\ 27''$$
$$15\ \text{R} = 51570',$$

and—

$$\frac{51570'}{731'\ 27''} = 70\tfrac{1}{2} = \frac{\text{R}}{49} \text{ nearly.}$$

Hence, approximately—

$$\text{Parallax in latitude} = \frac{\text{Sin. Z}_1}{70}, \text{ or } = \frac{49\ \text{Sin. Z}_1}{\text{R}}.$$

With the value of the parallax so found, the time of conjunction is to be corrected. The parallaxes in longitude (p_1, p_2, p_3) for the beginning, middle, and end of the eclipse respectively having been calculated; the quantities—

$$p_2 \pm p_1, \quad p_2 \pm p_3$$

are to be added as corrections to the half durations previously determined.

Chapter VI.

On Planetary Conjunctions.

To find when two planets will have the same longitude (vv. 3-6).

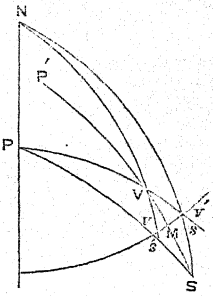
Let θ', θ'_1, be their longitudes,
n, n_1, their daily motions.

Then they are distant from the point where they will have the same longitude, respectively,—

$$\frac{(l - l_1)\, n}{n \pm n_1}, \text{ and } \frac{(l - l_1)\, n}{n \pm n_1}.$$

To find the moment of conjunction, *i.e.*, when they will be on the same secondary to the ecliptic (vv. 7-12).

Let V, S, be the two planets having the same longitude,
N the north point of the horizon,
P, P′, the poles of the equator and ecliptic,
P S, P V, great circles from P, cutting the ecliptic in s and v,
N S, N V, great circles from P, cutting the ecliptic in s' and v',



then the two planets are removed from conjunction by the distance $v\ s$. To determine this, find—

$$\mathrm{M}\, v + \mathrm{M}\, s = v\, v' - \mathrm{M}\, v' + s\, s' - \mathrm{M}\, s'.$$

Let ss'_0 be the value of $s\, s'$ when S is on the horizon. Then P S M is an angle which $= 0°$ when the pole is on the horizon, and $= 90°$ when it is at the zenith; and is on that account supposed to vary with the elevation of the pole; in other words, it is assumed $=$ the latitude (L) of the observer. And S being supposed always near the ecliptic, s S s' is regarded as a plane triangle, having the angle $s'\, s$ S $= 90°$. Hence—

$$\frac{s\, s'_0}{l} = \frac{\text{sin. L}}{\text{cos. L}} = \frac{s}{g}$$

Again, for any other position of S, we have the proposition—

$$s\, s' : s\, s'_0 = \text{merid. dist. in time} : \tfrac{1}{2}\ \text{day},$$

or—

$$s\, s' = \frac{l\, s}{g}\, \frac{t}{\frac{1}{2}\ \text{day}}.$$

In the same way, in the $\triangle$ M S s', the angle at s' is considered as $= 90°$, and consequently—

$$\frac{\mathrm{M\ S}}{\mathrm{M}\ s'} = \frac{\mathrm{R}}{\text{sin. M S } s'}.$$

But since M is supposed always near the ecliptic, M S s' = P' S P = P' M P, nearly; and if D' be the declination of a body 90° in advance of M,—

$$\frac{\text{M S}}{\text{M } s'} = \frac{\text{R}}{\text{sin. D}'}.$$

But—

Sine of greatest declination = sin. 24° = 1397′ = 58 × 24′ nearly;
whence it is concluded that sin. D′ = 58 × D′:
also radius = 3438′ = 58 × 60′ nearly;

whence—

$$\text{M } s' = \frac{l\ \text{D}'}{60}.$$

In the same way $v\ v'$, and M v' may be found; and thence $v\ s$ completely determined.

Art. XV.—*On some Fragments of* Áryabhaṭṭa. By Dr. H. Kern.

[*Read 16th March*, 1863.]

There are few names in the history of Indian science which have acquired a celebrity equalling that of Áryabhaṭṭa. He is—to use the words of Colebrooke—"the earliest author known to have treated of Algebra among the Hindus, and likely to be, if not the inventor, the improver, of that analysis; by whom, too, it was pushed nearly to the whole degree of excellence which it is found to have attained among them." But, notwithstanding the renown of the Indian algebraist and astronomer, not only among his countrymen, but also among the Arabian scholars, his works seemed to be lost. Neither was Colebrooke successful, nor was Davis more so, in their endeavours to find any work of his. What was known about his doctrine, which in many points deviated from the prevailing opinions among Indian astronomers, was derived from quotations occurring in various mathematical and astronomical writings. Now, it is deserving of notice, that in Southern India there are copies extant of works that most unequivocally lay claim to being the genuine productions of Áryabhaṭṭa. The late Mr. Whish knew an Áryabhaṭṭíyam, a treatise on arithmetic and mathematics, to which I shall have to revert in the course of this paper. Prof. Lassen says, in his *Indische Alterthumskunde*,[1] that he has received from Southern India copies of two works ascribed to Áryabhaṭṭa, viz., of the above-mentioned Áryabhaṭṭíyam and of the Daśagítaka-sútra. In an article on the Árya-siddhánta in the 6th volume of the Journal of the American Oriental Society, Dr. Fitz-Edward Hall has verified an Árya-siddhánta, of which he possessed two imperfect copies, by extracts occurring in the writings of various commentators. The conclusion he arrives at is, that there were two

[1] *Ind. Alterth.*, 2nd vol., p. 1136. Prof. Lassen concludes, from the somewhat equivocal words of Reinaud, *Mémoire sur l'Inde*, pp. 321 and 322, that the Áryabhaṭṭíyam is spoken of by Albírúní. So far as I can see, Albírúní intimates only that the Indian astronomical systems (*méthodes*) could be reduced to three, the Sindhind, the Áryabhaṭṭa, and the Arkand. It is an inference of Reinaud that the system called Áryabhaṭṭa is identical with the Áryabhaṭṭíyam, which, according to Whish, is not a treatise on astronomy, but on arithmetic and mathematics.

authors of the name. If the same course were adopted in regard to all the works ascribed to Áryabhaṭṭa, or to an Áryabhaṭṭa, if their contents were compared with the numerous fragments scattered in different works, chiefly commentaries, one might indulge the hope that the question of the authorship of Áryabhaṭṭa would be settled in a satisfactory manner.

This is a task, however, I cannot assume at present; and I propose only to contribute a small share towards solving the question by giving the following extracts. All of them are taken from the commentary of Bhaṭṭa Utpala on the Váráhí Sanhitá, or Bṛihat-Sanhitá, of Varáha-mihira. According to the list of astronomical writers furnished by the astronomers of Ujjayiní to Dr. Hunter, and published by Colebrooke (Algebra, Note E), the commentator flourished about the Śáka-year 890 (A.D. 968-69); and, agreeably to this statement, it is said, at the end of the commentary, that it was finished in the Śáka-year 888, or A.D. 967.[1]

I am sorry to say that the copies of Utpala's commentary are in such a condition that I have often been obliged to recur to conjectures, most of them, however, being obvious. The uncertainty about the true reading materially affects the translation; and the want of any explanation on the part of Utpala does so in a no less degree. At the same time, I am of opinion, that the greater or less degree of correctness of the extracts by no means renders them less important for the purpose of comparing them with the complete works ascribed to the renowned Indian mathematician and astronomer.

I shall begin with the following extract, which is to be found in the commentary on the second chapter of the Váráhí Sanhitá:[2]

[1] The date in full is given in Utpala's own words:

फाल्गुनस्य द्वितीयायामसितायां गुरोर्दिने।
वस्वष्टाष्टमिते शाके कृतेयं विवृतिर्मया॥

"On the second lunar day of the dark half of the month Phálguna, on a Thursday, in the Śáka-year 888, I finished this commentary."

[2] One of the MSS. belonged formerly to Colebrooke: for convenience sake, I shall call it B, and the other A. The fragment is introduced, in B, by the words तथा चार्यभट्टः, in A by तथा चाचार्यभट्टः. The various readings, mere blunders being omitted, are: B सर्वतो ष्यंते for सर्वतो वृत्तः.—B सर्वसंधैः.—A प्रभाकरो, B प्रभाखरे.—A मकरो for नरको.

वृत्तभपञ्जरमध्ये कक्षापरिवेष्टितः खमध्यगतः ।
मृज्जलशिखिवायुमयो भूगोलः सर्वतो वृत्तः ॥
यद्वत्कदम्बपुष्पग्रन्थिः प्रचितः समन्ततः कुसुमैः ।
तद्वद्धि सर्वसत्त्वैर्जलजैः स्थलजैश्च भूगोलः ॥
मेरुर्योजनमात्रः प्रभास्वरो हिमवता परिक्षिप्तः ।
नन्दनवनस्य मध्ये रत्नमयः सर्वतो वृत्तः ॥
स्वर्मेरू स्थलमध्ये नरको वडवामुखं च जलमध्ये ।
असुरसुरा मन्यन्ते परस्परमधःस्थितान्नियतम् ॥

"The terrestrial globe, a compound of earth, water, fire, and air, entirely round, encompassed by a girdle [*the equator*], stands in the air, in the centre of the stellar sphere. Like as the ball formed by the blossoms of the Nauclea Kadamba is on every side beset with flowerets, so is the earth-globe with all creatures terrestrial and aquatic. Mount Meru, measuring only a *yojana*, being wholly round, and consisting of gems, spreading lustre, and surrounded by the snowy mountain, is in the midst of Paradise.[1] Heaven and Mount Meru are in the midst of the land; hell and the Vaḍavámukha are in the midst of the waters. The gods and the demons, of necessity, deem each other to be undermost."

The general features of this geographical system agree with that of the Súrya-siddhánta (chapter 12), and other astronomical works. By hell, *naraka*, is intended the abode of the demons; and Vaḍavámukha, denoting, in popular belief, as well the submarine fire as a kind of Charybdis and abyss, is here, as it will appear more clearly from another passage of Áryabhaṭṭa, the supposed abode of the dead. We find here, about the division of our planet into land and water, nearly the same notion that prevailed, not only in other text-books of Indian astronomy, but also with Greek geographers, as Eratosthenes and Strabo, namely, that the northern hemisphere only is a continent and inhabited, and that the southern half consists of water, and is uninhabitable, at least for men. A peculiar feature of this piece of Áryabhaṭṭa's geographical

[1] The word Nandanavana, rendered here by Paradise, is the well-known garden of India. It is also called Nandanadyána in the Kathá-sarit-ságara, *taranga* 28, vs. 52 (edition of Brockhaus in the *Abhandlungen für die Kunde des Morgenlandes*, 1862).

system, which distinguishes it from the prevailing opinion of the Hindus, is his acknowledging only four, not five, elements. To account for this peculiarity by assuming him to have adopted this doctrine from the Bauddhas and Jainas seems objectionable, because these sects are notorious for their preposterous ideas about the heavenly bodies,[1] quite different from those of Āryabhaṭṭa. I would rather suggest that he borrowed this idea from the Greeks. However, it is but fair to say that he could *not* have borrowed the idea from an ancient work of reputed Greek origin, viz., the Pauliṣa-siddhánta, the author of which was Puliṣa, or, as Albírúní styles him, Paulus the Greek. For we know, accidentally, from a quotation by Bhaṭṭa Utpala, that the Pauliṣa-siddhánta acknowledges five elements. It will not be out of place to give the very words:[2]—

वृत्ता चक्रवदवनिस्तमस्य पारे विनिर्मिता धात्रा ।
पञ्चमहाभूतमयी तन्मध्ये मेरुरमराणाम् ॥

"The earth is round like a wheel (or disk), produced by the Creator at the end of darkness. It consists of five elements. In the midst of it is the Meru of the gods."

It will be seen at once, that the shape of the earth being compared to a wheel or disk implies a much lower degree of geographical science than is met with in any Indian book on scientific astronomy.

To revert to Āryabhaṭṭa, I subjoin the original of a passage already noticed and translated by Colebrooke in his Algebra, Note I:[3]—

मेषादेः कन्यान्तं सममुद्गयमण्डलार्धमुपयातम् ।
तौल्यादेर्मीनान्तं शेषार्धं दक्षिणेनैव ॥

"An equal half of the ecliptic, from the beginning of Aries to

[1] See Colebrooke, *On the sect of the Jainas*, and As. Res., xii, p. 228.

[2] They are to be found in Cod. A, fol. 29, in B, fol. 33. The latter MS. has तमस्यारे विनिर्मुक्ता.

[3] Here both copies concur in reading तथा चाचार्यभट्टः, intending, very likely, चाचार्यार्यभट्टः.—A सममुद्गयनं म°, B समुद्ययगपम°.

the end of Virgo, is situated in the north; the other half, from the beginning of Libra to the end of Pisces, is in the south."

The following two passages bear upon the relative distance of the planets, including the sun and moon, from the earth, the supposed centre of the celestial sphere, and upon the relative dimensions of the planetary orbits:—

भानामधः शनैश्चरबृहस्पतिकुजार्कशुक्रबुधचन्द्राः ।
एषामधश्च भूमिर्मेषीभूता खमध्यस्था ॥

"Below the fixed stars are, successively, Saturn, Jupiter, Mars, the Sun, Venus, Mercury, and the Moon; below all these is the Earth, being in the midst of the ether."[1]

Concerning the relative dimensions of the orbits, Áryabhaṭṭa has taught thus:—

मण्डलमल्पमधस्तात्कालेनाल्पेन पूरयति चन्द्रः ।
उपरिष्टात्सर्वेषां महच्च महता शनैश्चारी ॥
अल्पे हि मण्डलेऽल्पा महति महान्तश्च राशयो ज्ञेयाः ।
अंशाः कलास्तथैवं विभागतुल्याः खकक्षासु ॥

"The Moon, being undermost, completes a small circle in a short time; and Saturn, being uppermost, a large circle in a long time. For upon a small circle the signs are small, whereas they are great upon a large circle; so, too, the degrees and minutes are divided proportionately to the respective orbits."

Áryabhaṭṭa, for aught we know, was the first, and remained almost the sole, astronomer among his countrymen, who affirmed the daily revolution of the Earth on its own axis. His words, as quoted by Utpala,[2] differ from those cited by Pṛithúdakaswámin, the commentator of Brahmagupta (As. Res., xii, p. 227); but it is superfluous to remark that the same author had more than one opportunity, either in the same work or in some other, to repeat his assertion.

[1] The word *meshíbhútá* is omitted in the translation, since it is devoid of meaning in this connexion. I surmise that we ought to read *medhíbhútá*, *medhí* being "a post fixed in the centre of a threshing-floor or barn, to which the cattle are attached, as they turn round it to tread out the corn."—*Wilson*.

[2] A has आचार्यार्यभट्टेन, B आचार्यभट्टेन.

अनुलोमगतिर्नौस्थः पश्यत्यचलं विलोमगं यद्वत् ।
अचलानि भानि तद्वत्समपश्चिमगानि लङ्कायाम् ॥

"As a person in a vessel, while moving forwards, sees an immoveable object moving backwards, in the same manner do the stars, however immoveable, seem to move (daily); at Lanká (*i.e.*, at a situation of no geographical latitude) they go straight to the west (*i.e.*, in a line that cuts the horizon at right angles, or, what is the same, parallel to the prime vertical at Lanká)."

The theory of the immobility of the fixed stars is not approved of by Bhaṭṭa Utpala, who endeavours, consequently, to refute it, partly by reasonings of his own, partly by invoking other authorities. One of his arguments is based upon the supposition that birds, after having soared to the sky, would be unable to find again their nests, यद्येवं (if the Earth moved) श्येनाद्या न स्वान्पुनः स्वनिलयमुपेयुः Further, he appeals to the Paulisa-siddhánta, which taught:[1]—

तस्योपरि ध्रुवाख्ये तद्बद्धं पवनरश्मिभिश्चक्रम् ।
पवनाक्षिप्तं भानामुदयास्तमयं परिभ्रमति ॥

"To its (the celestial sphere's?) so-called upper pole this wheel is fastened with cords of air; the (points of) rising and setting of the stars propelled by the wind are always revolving."

This is another instance of the inferior quality of the science expounded by Puliśa. Another authority appealed to by Utpala is the Brahma-siddhánta, an extract from which is here subjoined:

ध्रुवयोर्बद्धं सव्यगममराणां क्षितिजसंस्थमुडुचक्रम् ।
अपसव्यगममुराणां भ्रमति प्रवहानिलाक्षिप्तम् ॥
अन्यच्च सर्वतो दिग्गमुन्नमति भपञ्जरो ध्रुवो नमति ।
लङ्कायामुडुचक्रं पूर्वापरगं ध्रुवो क्षितिजे ॥

[1] The reading is conjectural, A exhibiting ध्रुवे, B भ्रुवाख्ये. As to the general meaning there can be no doubt.

"The circle of asterisms (the ecliptic) connected with the two poles revolves, being propelled by the provector wind; to the gods (being at the north pole) it is in the horizon, and moves from left to right,[1] but, to the demons, from right to left. Everywhere else the sphere is elevated, and the pole is depressed. For Lanká (*i.e.*, for a place of no latitude), however, the circle of asterisms goes from the east point of the horizon to the west point, and there the pole is in the horizon."

Utpala might have selected more unobjectionable passages than this, which commits the unwarrantable inaccuracy of confounding the ecliptic with the equator. A third authority opposed to Áryabhaṭṭa—and it is not a little surprising to learn this—is Áryabhaṭṭa himself. For Utpala cites from him as follows:—

उदयास्तमयनिमित्तं नित्यं प्रवहेण वायुनाक्षिप्तः।
लङ्कासमपश्चिमगो भमण्डलः सग्रहो भ्रमति॥

"The cause of the rising and setting is, that the circle of asterisms, with the planets, being always propelled by the provector wind, moves straight to the west."

This passage may have been one of those on which Brahmagupta founded his charge of inconsistency against his renowned predecessor (see Colebr., Algebra, Note G, and As. Res., xii, p. 213). But, without knowing more of the context, we dare not assert Áryabhaṭṭa to have been really inconsistent: the foregoing stanza does not prove what Utpala supposes it to prove. Nor is it necessary to assume that this stanza is from another work of the same author. It is by no means improbable that the author simply intended, here, to report the opinion of others, or to give a description how the luminaries appear to move. It is deserving of remark that Utpala, who could have strengthened his position by pointing out the inconsistency, does nothing of the kind. This looks as if he were himself aware of his quotation's being inconclusive. I pass from the commentary on the second chapter of the Váráhí Sanhitá to that on the sixteenth, vs. 6. The fragment to be found there has been alluded to by Dr. Fitz-Edward Hall, in the Journal of the Am. Or. Soc., Vol. VI, p. 559.

[1] For the sense of the terms *savyaga* and *apasavyaga*, see Súrya-siddhánta, ch. 12, vs. 55, and the valuable translation of it by the Rev. Mr. Burgess and Prof. Whitney.

देवाः पश्यन्ति भगोलार्धमुदग्मेरुसंस्थिताः सव्यम् ।
अपसव्यगं तं चार्धं दक्षिणवडवामुखे प्रेताः ॥[1]

"The gods dwelling on Mount Meru, in the north, see half of the asterisms going from left to right; the same half is seen by the dead in Vaḍavámukha, in the south, moving from right to left."

As to Meru and Vaḍavámukha, I refer to the extract near the beginning of this paper.

The last extract I have to offer is, in more than one respect, of high importance. Áryabhaṭṭa, as has been mentioned by Davis, in the As. Res., iii, p. 215, and afterwards by Colebrooke, in the As. Res., xii, p. 244, and Algebra, Note I, stated the revolutions of Jupiter in a Maháyuga to be 364,224. The original is given by Utpala in his comment on ch. 8, vs. 1, of the Váráhí Sanhitá:[2]

गुरुभगणा राशिगुणा आश्वयुजाद्या गुरोरब्दाः ॥
गुरुभगणानां संख्या जिनयमवेदर्तुहव्यभुजतुल्या ॥

"The revolutions of Jupiter, multiplied by the number of the signs (12), are the years of Jupiter, called Áṣwayuja, &c.; his revolutions are equal to the number of the Jinas, a couple, the Vedas, the seasons, the fires (*i.e.*, 364,224)."

There are, in this stanza, two circumstances that call for particular attention. In the first place, it is clear that Áryabhaṭṭa most distinctly states the first of the twelve years in the revolution of Jupiter to be Āṣwayuja, whereas, generally, up to the present day, the first year is called Kárttika. If we were sure that this fact implied another, viz., that Áryabhaṭṭa considered the lunar mansion Aṣwiní to be the first of the series, instead of Kṛittiká, we

[1] Both MSS. have भूगोलार्द्धं, which here is devoid of sense, and moreover disturbs the metre. Further, A has उत्तरमेरु, B उदगमेरु. —B तच्चार्द्धं, A तदर्द्धं.

[2] B has संज्ञा for संख्या, and वेदांग. The latter is unobjectionable, provided it be taken for two words, not for a compound.—A निनयनवेदर्तु.— Both have तुल्याः, and have added, in numerals, ३६४२२४.

should have one datum more for determining approximately his age. Before pronouncing upon the question, we have to bear in mind that the rule, according to which the twelve years of Jupiter received their names, is not uniform. Varáha-mihira[1] prescribes, that "the name of the year of Jupiter is determined from the asterism with which Jupiter rises heliacally, and that the years follow in the same order with the months." Other astronomers or astrologers of far more ancient date, as Garga, Káśyapa, and Ṛishiputra, give rules of the same purport. In order to avoid needless prolixity, I refer to the copious treatment of this subject by Davis, in the third volume of the As. Res., pp. 217, sqq. It is obvious that the rule laid down in Varáha-mihira, or rather repeated by him, was framed at a time when the series of asterisms was reckoned from Kṛittiká, and not yet from Aświní. It is, further, obvious that the same rule could not be followed after Aświní's beginning the ecliptic, unless the first year changed its name. Now, we are directed by the Súrya-siddhánta (ch. 14, vs. 17) to determine the name of a year of Jupiter from that asterism in which the Sun and Moon will be in conjunction at the end of the month in which the heliacal rising and setting take place. The first month being called Vaiśákha,—so-called because originally full moon occurred in the asterism Viśákhá,—it follows that the conjunction of the Sun and Moon, at the end of this month, will fall in Kṛittiká; and, agreeably to the rule, the first year of Jupiter is to receive the name of Kárttika. In this manner the order of the years is preserved; but it could be so only if the Súrya-siddhánta, which considers Aświní to be the first asterism, changed the rule of Varáha-mihira, or rather of his predecessors. Very likely the rule of the Súrya-siddhánta is an innovation by which it was designed to find a means of leaving unaltered the traditional order of the years. It is pretty sure, that Áryabhaṭṭa, whether the first asterism with him was Kṛittiká or Aświní, could not have determined the names of the years in the same manner with the Súrya-siddhánta. For, on the former supposition, the first year would have been called Márgaśírsha; in the latter, it would receive the name of Kárttika. Unfortunately, we cannot assert so confidently whether he did or did not make use of the rule with Varáha-mihira. If he really did, then the necessary consequence would be, that in his time the first of the series of asterisms *was* Aświní. But it will be permitted to affirm that the fragment quoted affords no sufficient data for deciding this question satisfactorily.

[1] Var. Sanh., ch. 8, vs. 1.

We are in a more favourable position as to the second fact worthy of notice, which I alluded to. For it may be shown that the way in which Áryabhaṭṭa gives the number of Jupiter's revolutions implies that he has made use of our arithmetical notation. This fact, although by no means surprising of itself, has acquired importance since the discovery, by Whish,[1] of an alphabetical notation in the Aryabhaṭṭíyam. This discovery has induced Prof. Brockhaus[2] to assert that Áryabhaṭṭa was unacquainted with the decimal notation; and with him agrees Reinaud, to whom we are indebted for an interesting *Mémoire sur l'Inde*. The latter scholar expresses his opinion in the following words:[3] "Apparemment, le procédé employé par Aryabhatta (viz., *the alphabetical notation*) était tombé en désuétude au temps d'Albyrouny. Néanmoins, les traités scientifiques composés par Brahmagupta, au 7ᵉ siècle de notre ère, et par les écrivains postérieurs, ne supposent pas, en général, l'usage des chiffres; les nombres sont exprimés par des mots susceptibles d'être rattachés à une qualité quelconque." Now, it is very true, as well as generally known, that, in Sanskrit works, numbers may be denoted by other words than the usual names of the numerals. This, however, has nothing whatever to do with the question of a particular notation, but is a matter merely of prosody. It is quite immaterial whether one chooses to say *tri* or *agni*, as, in English, *twenty* or a *score;* the essential point is to know whether the name of a unit, whatever the sound of that name may be, may occur at another place than the first right-hand place. When it is unquestionable—and so it is in the above-cited stanza—that, for instance, the sixth numeral from the right, denoted by a word for *three*, has the value of three hundred thousand, it is clear that the notation must have been a decimal one. Every passage in any Sanskrit book where we meet with the same method of expressing the numerals by the names of things, considered to present themselves in a certain quantity, tells us that it originated at a time when the decimal notation was known in India, with this restriction, that the numeral must consist of at least two figures. The fragment quoted shows, not only the views of Prof. Brockhaus and M. Reinaud to be inadmissible, but also, I believe, those of Prof. Lassen. This most distinguished scholar argues, from the existence of an inscription of the *Samvat*-year 380 or 323, which exhibits an alphabetical notation, that, in the time of Áryabhaṭṭa,

[1] *Transactions of the Lit. Soc. of Madras*, 1827.
[2] *Zeitschrift für die Kunde des Morgenlandes*, vol. iv, p. 81.
[3] *Mémoire sur l'Inde*, p. 299.

the decimal system was not yet *fully* developed; although he rightly urges, on the other hand, that the discovery of an alphabetical notation does not involve an entire ignorance of the ciphers (see Ind. Alterth., 2nd vol., p. 1139, and Thomas, in his edition of Prinsep's Indian Antiquities, 2nd vol., pp. 80–84). Assuming the *Samvat*-year to mean the year of the Vikramáditya-era, it remains still to be proved, first, that Áryabhaṭṭa lived before or about 380 or 323 of the Vikramáditya-era, and, secondly, that the use of a certain notation in *one* monument involves the general currency of the same notation, for every use, throughout the whole of India.

Thus we may safely conclude, I think, that the great algebraist has made use, in his calculations, of the system handed down to us by the Arabians, and to these by the Hindus. To the unpractical alphabetical notation no regard has been paid, even by those Indian mathematicians who derived their science mainly from the works of the reputed founder of algebra. Whish, *l. c.*, p. 56, tells us: "I am not, indeed, aware that it has since been in use among mathematicians, never having observed it in their works. It must, however, have been understood by them; for the three books, Lílávatí, Laghu-Bhāskarīyam, and Mahā-Bhāskarīyam, of Bhāskara-āchārya are founded upon the principles of the Āryabhatīyam; the Lílávatí, in particular, is composed from the second chapter of the work."

If Bháskara nowhere mentions the alphabetical notation, Albírúní decidedly knew nothing of it (see *Mémoire sur l'Inde*, p. 299); which would be rather strange, if, by the third of the three astronomical systems, Sindhind, Arkand, and Áryabhaṭṭa, the Āryabhaṭṭíyam really was intended. But I have already stated my grounds for not believing this work to be identical with the system of Āryabhaṭṭa.

The above fragments of Āryabhaṭṭa are not of a nature, at least to my idea, to afford new data for fixing his age. The last extract, exhibiting Áṣwayuja as the name of the first year in Jupiter's revolution, makes, indeed, the impression that he considered Aṣwiní to be the first asterism; but it is no more than an hypothesis, so long as it is not corroborated by other evidence. And it may be observed that, if the hypothesis, after further investigation, should prove to be true, it still does not admit of the inference that, in his time, the very beginning of Aṣwiní coincided with the vernal equinox. And every degree of difference in longitude involves a difference of about seventy years in the time of precession. Therefore I shall content myself with referring to the dis-

cussion of the subject by a scholar who with most profound and vast learning combined so much cautiousness and conscientiousness, —by Colebrooke. He has made out that Áryabhaṭṭa lived before Varáha-mihira, who, according to external evidence, lived in the 6th century of our era (Algebra, Notes I and K; cf. *Mémoire sur l'Inde*, p. 337). He was not aware of Varáha-mihira's distinctly mentioning Áryabhaṭṭa; and, certainly, neither in the Sanhitá, nor in the Bṛihad-Játaka, nor in the Laghu-Játaka, is the name to be met with. Nevertheless, I believe I have found a passage, quoted by Utpala, and perhaps taken from the Panchasiddhántiká, in which the name occurs. The passage itself must have been known to Colebrooke; but the MS. he possessed is so badly corrupted, that it seems to have escaped his notice that the passage was from Varáha-mihira. In order that others may judge for themselves, I subjoin the whole passage, which is a little long, but, for many reasons, curious.

Bhaṭṭa Utpala, after giving the rules for finding the lord of the day, month, year, &c., proceeds to intimate that learned authorities are at variance touching the commencement of the days of the week (and consequently about that of the creation); some reckoning from sunrise, others from midday, others from sunset, and others, again, from midnight.

दिनपतिहोराधिपत्योराचार्याणां निश्चयो नास्ति। केषांचि दौदयिको वारपतिरन्येषां माध्याह्निकोऽन्येषामास्तमयिकोऽन्येषामार्धरात्रिक इति॥ तथा चाचार्यः॥[1]

"The lord of the day of the week begins, with some, at sunrise, with others at midday, with others again at sunset, with a fourth school at midnight. So says also the Áchárya." The title *áchárya*, by itself, invariably means, with Utpala, Varáha-mihira; and the following extract exhibits, in every respect, the famous astrologer's style, being defective in precision and clearness:—

[1] B, the MS. formerly in the possession of Colebrooke, omits ऽन्येषामास्तमयिको, which may account for his knowing only three schools, instead of four. See Algebra, Dissert., p. viii. Cf., however, Davis, As. Res., ii, p. 261.

द्युगणाद्दिनवाराग्निर्द्युगणोऽ पि हि देशकालसंबद्धः ।
लाटाचार्येणोक्तं यवनपुरेऽ र्धास्तगे सूर्ये ॥[1]
रव्युदये लङ्कायां सिंहाचार्येण दिनगणोऽ भिहितः ।
यवनानां निशि दशभिर्गतैर्मुहूर्तैश्च तद्ग्रहणात् ॥[2]
लङ्कार्धरात्रसमये दिनप्रवृत्तिं जगाद चार्यभटः ।
भूयः स एव चार्कोदयात्प्रवृत्याह लङ्कायाम् ॥[3]
देशान्तरसंशुद्धिं कृत्वा चेन्न घटते तथा तस्मिन् ।
कालस्यास्मिन्साम्यं तैरेवोक्तं यथाशास्त्रम् ॥[4]
मध्याह्नं भद्राश्वेष्वस्तमयं कुरुषु केतुमालायाम् ।
कुरुतेऽ र्धरात्रमुद्यन्भारतवर्षे युगपदर्कः ॥
उदयो यो लङ्कायां सोऽस्तमयः सवितुरेव सिद्धपुरे ।
मध्याह्नो यमकोट्यां रोमकविषयेऽ र्धरात्रः स्यात् ॥
अधिमासकोनरात्रयहदिनतिथिदिवसमेषचन्द्रार्काः ।
अयनर्तुवर्षगतिनिशाः समं प्रवृत्ता युगस्यादौ ॥
अन्यद्रोमकविषयाद्देशान्तरमन्यदेव यवनपुरात् ।
लङ्कार्धरात्रसमयादन्यत्सूर्योदयाच्चैव ॥

[1] A has बालाचार्येण.—B वास्तगे.

[2] B omits मुहूर्तैः.—A तद्गुणाः.

[3] A चाचार्यभट्टः, which is wholly out of the question. The reading of B, चार्यभट्टः, however, is also against the metre; and therefore I venture to read चार्यभटः, a form not infrequent in MSS., and in favour of which might be urged the fact that the Arabian transcription sounds Arjabhar. A has भूयांस एव चार्कोदयात्प्रभृत्याहुर्लंकायां, B यूयः स एव.

[4] A तथास्मिन् । सम्यं तैरेवोक्तं, B तथा च तस्मिन् । कातस्यास्मिन् शाम्यां तेरेवोक्तं.

सूर्योदयादसमयात्प्रतिविषयं यदि दिनाधिपं ब्रूमः ।
तत्रापि नाप्तवाक्यं न च युक्तिः काचिदप्यस्ति ॥[1]
संध्या क्वचित्क्वचिदहः क्वचिन्निशा दिनपतिः क्वचित्क्वचित् ।
स्वल्पे स्वल्पे स्थाने व्याकुलमेवं दिनपतित्वम् ॥
होरावर्तोऽप्येवं यस्माद्धोरा दिनाधिपस्याद्या ।
तस्यापरिनिष्ठाने होराधिपतिः कथं भवति ॥
अविचार्यैव प्रायो दिनवारे जनपदः प्रवृत्तोऽयम् ।
स्फुटतिथिविच्छेदसमं युक्तमिदं प्राहुराचार्याः ॥

"The day of the week is to be determined from the sum of days (viz., *from the creation*); the sum of days stands in connexion with situation and daytime. Láṭáchárya says that the days are to be reckoned from sunset in the city of the Yavanas. Sinháchárya states the sum of days (to begin) from sunrise at Lanká; and, in adopting this view, they must begin, with the Yavanas, at the time when ten *muhûrtas* of the night are past. Áryabhaṭa has affirmed that the day begins (*i.e.*, is considered by some to begin) at midnight at Lanká; but the same says, further, that the day commences (viz., according to his own opinion) from sunrise at Lanká. If, after taking into account the different longitude of a country, the result does not agree with the actuality in this country, yet the correspondence of time has been stated by the same authorities, on scientific principles, as follows:[2] The sun, while rising in India, at the same moment causes midday in the region of the Bhadráśwas, sunset in that of the Kurus, midnight in Ketumálá. At the time of the sun's rising at Lanká, he is setting in the city of the Perfected; it is midday in Yamakoṭi, and midnight in Romaka-country. The intercalary months, the omitted lunar days, the days of the planets,[3] the lunar days, the days, the

[1] A प्रतिवर्षं.

[2] The meaning of this obscure stanza seems to be, that there is no general rule for determining the commencement of the days of the week, this depending not only upon longitude, but also on the particular custom of a country. What, nevertheless, can be brought under scientific rules, is the correspondence of time. In other words, the rules are only *theoretic, yathâśástram.*

[3] *U'narâtra* and its synonym *Kinarâtra* are wanting in the dictionaries. With the aid of etymology, we can make out that they mean the *night,* or nearly

Ram, the Moon, the Sun, the half-years, the seasons, the daily motion of the stars, the nights, start at (*i.e.*, must be reckoned from) the same moment in the commencement of the *yuga*. It is not the same if you count the longitude from Romaka-country and from Yavana-city; nor is it alike, if you begin from midnight at Lanká and from sunrise there. Neither do we, when determining from sunset the lord of the day for every situation, have trustworthy oral evidence, nor is there any means for inference. In one place it is twilight, elsewhere day, or night; in short, for every small distance there is a different lord of the day. So, ascertaining the lord of the day is an entangled question. The case stands the same for the return of the *horás*; for the *horá* is the first (hour) of the lord of the day: the latter not being fully ascertained, how can the lord of the *horá* be so? Generally, people here regulate their concerns on a day of the week, without considering such questions; the learned pronounce it to be right, when one takes the day to coincide with the limits of the apparent (*i.e.*, not the mean) lunar day."

Besides the name of Áryabhaṭṭa, or Áryabhaṭa, we are indebted to this quotation for one glimpse more into the geographical system of this astronomer and two others, Láṭáchárya and Sinháchárya. It appears, from the words of the text, that these three agreed with each other. Comparing their opinions with the doctrine of the Súrya-siddhánta (ch. 12, vs. 37-40 and vs. 70), we find the same agreement. As Albírúní seems to give a somewhat different account, I will quote his words, as translated by M. Reinaud, and examine the weight to be attached to them:[1] "Il est dit dans le Paulisa-Siddhânta, composé par Paules le Grec, que la terre et la mer sont coupées par une ligne nommée Tilkascha,[2] c'est-à-dire, ligne sous laquelle il n'y a pas de latitude. Cette ligne répond à ce que nous appelons la ligne équinoxiale. Aux quatre points cardinaux sont quatre villes considérables, à savoir: Yama-Kota, à l'orient; Lanka, au midi; Romaka, à l'ouest; et Siddhapour, au

so, by which the synodical lunar month of thirty *tithis* is *less* than thirty solar days. The number of *tithis* continually gaining upon that of the solar days, the difference will amount, in a little more than two months, to a whole *tithi*, which must be expunged. Therefore, *únarâtra* is rendered by *tithinaya*; it properly being the cause of the latter becoming necessary.—The days of the planets mean here, I think, the days of the week.

[1] *Mém. sur l'Inde*, p. 341.

[2] This word is certainly wrong. For ; one may read ;, and pronounce *nilaksha*, closely approaching the Sanskrit *niraksha*.

nord. Quand le soleil se lève sur la ligne qui va de Lanka à Merou, il est midi à Yama-Kota, minuit à Romaka et six heures du soir à Siddhapour." Reinaud proceeds thus: "Albyrouny ajoute que la même opinion avait été émise dans les Siddhântas composés par Aryabhatta, Vasishtha et Lat; mais il fait observer avec raison que, d'après les termes mêmes, il ne peut s'agir là des quatre points cardinaux, mais des quadrans de l'équateur." I cannot help mistrusting here the accuracy of the Arabian astronomer. The doctrine of the Pauliṣa-Siddhánta, absurd as it is, is consistent with the false assumption of the Earth's having the shape of a wheel or disk, as we have seen above. Therefore this Siddhánta must have intended really the four cardinal points. On the other hand, it is quite impossible that Áryabhaṭṭa, or any one else who supposed the Earth to be a globe, took the same view of the course of the Sun. The words of Varáha-mihira, as well as those of the Súrya-siddhánta, leave no doubt as to the author's meaning quadrants of the equator, and not the cardinal points. Moreover, we know that, according to Áryabhaṭṭa, at the north pole was situated Mount Meru, and, at the south pole, Hell. I fear that Albírúní has been too hasty in passing his criticisms.

I shall conclude with a remark suggested by the occurrence of the names of Romaka-country and Yavana-city,

It is intimated, that, in the country of the Yavanas, the time corresponding to sunrise at Lanká, that is, six o'clock in the morning, is ten *muhúrtas* in the night. It is not distinctly said at what time the night is to begin; but it can hardly be at another hour than six o'clock in the evening. Now, ten *muhúrtas* later gives two o'clock in the morning, from which we derive the fact, that Yavana-city was presumed to have a longitude west from Lanká, or the meridian of Ujjayiní, amounting to 60 degrees. The meridian over Yavana-city having a longitude of 30 degrees (consequently, east from Romaka-city), we arrive at the conclusion that by Yavana-pura is meant Alexandria. The error in determining the longitude of Rome from the meridian of Ujjayiní is conspicuous, but not so very astonishing, if we remember that even Ptolemy's estimates of longitudes exceed the truth. So, to take one instance, Kanogiza, or Kanoj, is made by him to have a longitude, east from the Insulæ Fortunatæ, of 145 degrees; the error amounting to nearly 50 degrees. The Hindu errors of position, carefully compared with the errors in the writings of Greek geographers, successively, would perhaps lead to important results for ascertaining the times of intercourse between Greek and Indian science. It is, however,

not the object of the present paper to do this; and I fear I have already made too long a digression.

ADDITIONAL NOTE.

Since the reading of the foregoing paper, I have been enabled, by the kindness of Prof. Weber, to ascertain, that all the quotations of Utpala, with the exception of one half-stanza, occur in a MS. of the Berlin Library. In the colophon of that work the title is given as follows: "Ity Áryabhaṭa-siddhánta-vyákhyáne Bhaṭapradípe Daśagíti-bháshyam samáptam." The concluding stanza is communicated in the Journ. Amer. Or. Soc., 6th Vol., p. 561, by Prof. Whitney, with the following translation: "Bhúta-Vishṇu (?) hath thus comprehensively explained—having learned it by the favour of his teacher—the Daśagíti text-book (*Daśagíti-sútram*), of very obscure meaning, formerly promulgated by Bhaṭṭa." It is evident that Utpala must have considered this Daśagíti-bháshyam either as a composition by Áryabhaṭṭa himself, or as an authoritative paraphrase and substitute. It is somewhat puzzling that, at the end of the 3rd chapter of the Berlin MS., we find the words: "Iti śrímadácháryáryabhaṭavirachite siddhánta (r.-te) golapádaś chaturthaḥ." In the second chapter the author gives his own date: "shaṣṭyabdánám shashṭir yadá vyatítás trayaś cha yugopádáḥ | adhiká vinśati(r a)bdás tad iha mama janmato'títáḥ." The metre of the second half-stanza requires an emendation: perhaps we are to read *tadeha*, in lieu of *tad iha*. But still there remains a difficulty as to the meaning of *adhiká vinśatir*. The stanza may mean: "When three of the four Ages, and 3,600 years, are past, then there are past more than twenty years[1] from my birth." If this be the sense, the date would be the year 478 from the beginning of the Christian era. Unfortunately, it is not clear whether the date of A'ryabhaṭṭa is meant, or that of Bhútavishṇu. However it may be, certain it is, that one stanza in the large extract which I have ascribed to Varáha-mihira, is to be found in the Daśagíti-bháshyam, viz., उदयो यो लङ्कायां, &c. Hence this work must have been anterior to his time.

[1] As a date requires precision, I should surmise that *adhiká* is a misread *tryadhiká;* the characters अ and त्र being liable to be confounded. The rendering, in this case, would be, "twenty-three years," and the date, A.D. 475.

ART. XVI.—*On the Botany, Geology, &c., of the country between Tamatave and Antananarivo, in Madagascar.* By C. MELLER, ESQ., *of H.M.S. "Gorgon."*

[*Read 2nd March*, 1863.]

TO MAJOR-GENERAL JOHNSTONE, &c., &c., &c.

H.M.S. "Gorgon,"

MY DEAR SIR, *September 27th*, 1862.

In compliance with your request that I should furnish a few particulars on the botanical features of the country we passed through, on our way to Antananarivo, I will reduce my journal, and give as many salient points of the road as I can remember, begging you to have in mind that, in so hurried a journey, it is impossible to do justice to the materials supplied, and that our visit having been made in the winter season, a just appreciation of the country could not be formed. From specimens of timber subsequently obtained from a part of the island, remote from that of our road to the capital, I am able to aver that no opinion of the size or value of the woods can be formed from any seen on our journey.

One might prognose more from the character of the soil than from the existing flora what the products might be. So long as our road lay southward, we passed over a sandy tract, the first part of which, between Tamatave and Hivondro, formed a plain, studded with copse, and sparsely covered with grass.

By the sea, at Tamatave, is a belt of trees at a distance resembling Mangroves, but on nearer inspection they are found to consist of small Myrtles, Cinchonias, and Brexiads, larger specimens of which are met further on the road. One of these trees, the Inophyllum, is used by the natives for making their smaller canoes, and for building purposes. There was nothing remarkable to be seen in our first day's journey, if we except the Angræca Orchid, and a few flowering shrubs and trees that are seen in greater perfection farther on. A tree with a small greenish-white flower, and round hard fruit, was very common so long as our road was by the sea. It is a species of Strychnos of the Logania order, and is called Voantaka by the natives, who are very fond of its refreshing acid pulp. There is another tree scattered about with this Logania, the

Zizyphus Bælei, of the Buckthorn order. It is the Masaon of the East Coast of Africa, and Mason of Mauritius. As I have mentioned edible fruits here, I may add there is a Clusia bush with plum-like fruit on the same plain; an Anona, called Anatundirik by the natives, and many Leechees and Mangos, but the latter have probably been imported; and from the way in which devotees resort to the shade for prayer and offerings to the gods, one may infer that they are held in some veneration.

In the first small wood we passed through, there were many orders represented, but we saw better specimens of the same farther on; amongst these the Ficus Elastica was conspicuous, and the first Copal gum trees seen; also some Ardisiads, with their strikingly beautiful foliage. As bushes rather than trees were some Lauras, Brexiads, and Eucalypti. The ferns common by the sea route have been noticed by former visitors,—varieties of Polypody, a Pteris, the Langue de Bœuf, an Asplenium, and a Blechnum, are very common, with several others.

Forming a barrier to the beach, and scattered about, are several species of Pandanus. It is said that the natives plant them by the coast to protect villages and plantations from sand-drift. From the denseness of some of these barriers, there can be no doubt that they must act in this way, whether planted for the purpose or not, and they must be far more efficient than the Hottentot Fig of the Cape, which I believe is held in esteem as a natural break-drift. Leaving Hivondro, you will remember we passed by an extensive plain covered with timber in all stages of decay. Numbers of the dead trunks standing were topped or knobbed on the trunk or limbs with *pommes de fourmis*,—of a red ant.

Some parts of this plain seemed capable of fertility, having a sandy soil, with a thin superstratum of loam, but nowhere did the large trees thrive. May not the presence of these formidable ants account for this? Approaching the sea again, we found the Pandanus, Casuarina, and Copal, and the Apocynaceous order hitherto represented only by shrubs or herbs, such as the Vinca Rosea of the plains near Tamatave and Anerium, gives now the Tanghinia Veneniflua, the Voan Sangan, or ordeal poison of the Malagash, and a tree from which the natives procure India-rubber, called by them Tanghinia. We find now several species of Aloes, one like the Agave, a Zamia, and the Cycas Circinalis. By the lakes of the same part are seen two species of Hibiscus, and another of the Malvaceous order, with native name "Lafa," from the bark

of all three of which the natives obtain a strong fibre, from which they make twine and cord. Twining about these and other trees were several Convolvuli, one of which, an Ipomœa, is conspicuous; and near the same places a handsome little flowering Petrea. The Arums growing by the lakes are, as they have been represented, gigantic, and the Nymphæas growing in the lake may be worth notice, as one of them, a Lotos, furnishes its bulb as food for the natives in times of dearth of more common food. In the marshy parts by the lakes we saw the large white Crinum lily, and near them another, a Gloriosa. Along by the sea, and inland to a (probable) height of 3,000 feet, we have citrons. Of flowering plants, the Angræca and Daphnes are abundant, also two smaller Angræca and a Vanda Orchid.

Turning westward from the sea, vegetation changes. We meet the Ravanelle, and it accompanies us for the next three days' journey, viz., to Beforona, where it is lost, at a (probable) height of 1,400 feet. It has been held incredible that the Traveller's tree should reach a height of thirty feet. There were several to be seen on our way, that must have far exceeded this. In the ravines, where the Traveller was first seen, was the Bamboo common to the country; but it was not until we reached the thicket woods that we found the creeping varieties. On the banks of the lake, between the sea and the first village of the ascent, were ferns in abundance,—Hymenophyllum, Platycerium, with the Stag's-horn moss, and overhanging them the Jamrosin tree, and several Erythrinæ with their bunches of scarlet flowers. Sugar cane and cotton grew on the lands about, and though both were of an inferior description, they were in a flourishing condition. The cotton is confined to one sort, and does not seem to be much cultivated; I saw only small quantities of it in the market at Antananarivo. At Marombi, the village from which the ascent commences, the ground is loamy—almost alluvial, and well adapted for rice growing; the natives have made large tracts available for this purpose. Here we saw the Astrapæa, several Acaciæ and Erythrinæ growing, and round about the villages patches of wild raspberry and Heliconia. The raspberry leaf and fruit are used as a medicine for cough in young children, and a Solanaceous herb with blue flower, called "Bred," grows here abundantly; it is eaten as a vegetable, and given with other herbs as a medicine.

Before leaving the coast, I should have mentioned the peculiarity we noticed in the sand by the brackish lakes. It is very heavy, black, and full of shining particles resembling

pulverized plumbago. Rubbed in the hands, it leaves a black stain, which is not easily washed off. By the coast grew a heath, from four to eight feet high; it was met again on the red-clay hills, fifty miles south of the capital. One of the largest trees we leave with the sea was a Barringtonia. The Barringtonia Speciosa and this (another species) were also to be seen near Tamatave. By the village of Marombi were some trees of the Cinchona order, and shrubs of the Vangueria Edulis, or wild coffee of the country. For the three days occupied in passing from this to the entrance of the woods, we passed over fine grass hills, the ravines between which were filled with Traveller's tree, Rofia, and Musads. The road sometimes lay between rows of Composite trees and Mimosæ, and the higher we attained the more abundant did these become. By the rivers were some fine Copal and Betel-nut trees. The largest Copal seen was one by the Hivondro, which measured twenty-eight feet in circumference. From the soil of the ascent being at first of yellow clay, it had afterwards superimposed a layer of pebbles and detritus of quartz, and the river beds, from being at first of sand, later consisted of this and quartz and sandstone. I endeavoured to get some of the Ranomafana water, by making a valve at the end of a bamboo, such as the natives use for carrying water, and placing the mouth directly over one of the spots from which the hot jet was issuing. It is almost impossible to get the real temperature, unless a spring were isolated, as there must be more or less admixture with the cold water before the full effect is felt by the thermometer. The warm water obtained had a slight alkaline reaction, was insipid, and free of smell. A dollar previously brightened was put into the water, and observed after two days, when the surface was found of a brownish black colour.

Entering the woods, we lose the Traveller's tree, and find the tree-ferns. I noticed four varieties. They are most abundant between Beforona and Aneooca, that is to say, in the lowest and moistest part of the woods. Studding the hills and projecting in the ravines were boulders of sandstone, the exposed surface quite blackened; but there were scarcely any stones to be seen whilst passing through the first woods, the soil being wholly of clay, yellow and white stratified, and in some parts almost of the density of shale.

Pendent from most of the old trees, and fringing the trunks of both young and old, were many Lichens, Mosses, and Lycopodiums; the most abundant Lichen being of a yellowish green colour, much resembling Rocella Fuciformis. The trees were of no

magnitude. Two species of Tilia, or limes, grew to a height of sixty feet, and circumference of six (native name Hinzin); there was also a tree with red wood, the sap of which stained the earth about the roots of the same colour. The Varoan and the Salenti, a species of Gamboge, were amongst the finest trees seen as to size. The ebony is scarce and very small; much finer is brought to Tamatave from woods of the north-west and other parts. Sassafras wood is got from here, and Sarsaparilla and Calamba were seen in several parts of the woods, and are abundant elsewhere. There were two trees with abundant yellow resin named "Harunga" and "Kise." I had no means of ascertaining their respective orders. In the moist parts of the woods were several plants with variegated leaves of beautiful colours. Of these a Coleus, a Begonia, Sonerila, and Medinilla were conspicuous. A shrub (Pleroma) with bright scarlet flower and brilliant pink-veined leaves was a common ornament of the road-side before, and for sometime after, leaving the woods. On one of the highest hills in the centre of the woods stood two palms (Borassus); these were the only ones of the kind seen. One was probably between seventy and eighty feet high. A détour from the village of Analamagotra brings one to some level peaty ground, surrounded by the woods. Here I picked up what appeared to be some surface coal, of a bituminous nature. A piece held in a flame burnt away with a brilliant light, leaving no residue. It was about here that we met for the first time the Osmunda Regalis fern; but we had it for the rest of the road. On the hill sides, after leaving the woods, we met the Buddleia Madagascariensis ("Seore" of the natives); it forms the greatest ornament of the road to within forty miles of the capital; with it, on the hill sides and by our road, grew the Composite tree before mentioned, and two species of Arbutus.

The geological features of this part of the road have been pointed out by the former mission.

Thus far along the road we had had the houses made either entirely from the Rofia palm, and wooden planking or poles for supports, varied to split bamboo for sides, and grass for roofing. We met now with Papyrus in the marshes, and soon found this taking the place of the Rofia and of grass for roofing. We had this kind of roofing till arriving at the capital, where it is extensively used, but where also we found real tiles made of wood or clay, taking the place of it, for all the better houses.

The ravines after leaving the woods were less fertile than before, and in place of the loam soil which made them prolific

hitherto, there was now only a soil of yellow and red clays. The gneiss and black basaltic rocks were no longer seen studding the hills; in fact, the soil appeared to be of pure clays, and the stratification of them was exposed in the landslips twice seen by the way.

That at the Mangoro river exposes first a thin layer of sedimentary sandstone, beneath which is one of yellow clay, below this a red clay, mixed with a latentious detritus, and below and penetrating this last, a mass of honeycombed lava-like matter.

It was not before reaching the bare hills about 20 miles south of the capital, that we saw the massive slabs and boulders of granite spoken of by former visitors, and it may be that the barrenness of the country round about renders them the more conspicuous.

It is only at the lowest part of valleys and at the bases of hills that the soil can be made productive; it is evident from the devices had recourse to to irrigate these green spots, how valuable they are for producing a small supply of rice for the teeming population round about. With the exception of a few heaths and ferns, Citrons, the Buddleia, and other hardy plants, there is but little vegetation after leaving M'batomanga; but that judicious care and irrigation will permit of the soil being made productive, was proved in our visits to the country round about Antananarivo, where we found Bananas, Fig-trees, a few Rofias, Pandanas, and prune and ornamental trees growing luxuriantly.

Visiting the country at so healthy a season, very little can be said of the diseases common to it. The little fever we saw had an intermittent character, but readily gave way to treatment. Hearsay evidence of its worst forms, however, would lead one to conclude that it rapidly destroys life, especially when it takes the irregular form of an alteration of hot and cold stages, with speedy supervention of Coma. Now that there are European medical men in the country, some reliable information may be looked for after the next unhealthy season.

There is certainly not so much syphilis as we were led to suppose, though the ravages have been frightful in isolated cases.

Again, we must remember that the natives know of no specific treatment, and the disease is sent down from generation to generation.

Though many natives are marked with the scars of small pox, I was led to understand that this disease is seldom deadly; insomuch that, though acquainted with the advantage of vaccination, they seldom have had recourse to it.

The skin diseases seem to be those common to the tropics, Impetigo, Lepra, Elephantiasis (only one case seen), secondary eruptions, &c., &c.

I append the names of woods obtained as specimens for the Admiralty, and of those in use with the natives for house and canoe building, with a few other particulars, and am,

My dear Sir,

Very faithfully, yours,

(Signed) CHARLES MELLER.

RETURN JOURNEY.

DEPARTURE.	Date.	Time.	ARRIVAL.	Date.	Time.	Distance in Miles.
	1862	A.M.		1862	P.M.	
Antananarivo	Au. 18	11·0	M'batomanga	Au. 18	4·0	18
M'batomanga	19	7·0	Mandranahody	19	3·0	20
Mandranahody	20	6·50	Moramanga	20	4·0	25
Moramanga	21	7·0	Analamazotra	21	3 0	18
Analamazotra	22	7 0	Beforona	22	3·30	18
Beforona	23	7·20	M'passimbé	23	3·0	20
M'passimbé	25	7·0	Monambohitra	25	5·0	20
Monambohitra	26	7·0	Andravakamenerana	26	3 0	20
Audravakamenerana	27	7·0	M'panirano	27	4·0	20
M'panirano	28	7·0	Tamatave	28	5·0	25
				Total		204

THERMOMETER.

Maximum at noon, 85°. Miniumum, between four and six o'clock, A.M., 49° (but Mr. Caldwell's party observed as low as 45°). Mean at noon, 75°.

NAMES OF WOODS PROCURED.

BARAKA.—Very hard and capable of fine polish; is used for making furniture and cabinet work.

HAZOAMBA.—50 to 60 feet high; very soon rots if not protected from moisture.

HAZOMAINTY.—Ebony; not much on the east coast; more and better on the west.

HAZOMBATO.—Grows to the northward of Tamatave, to 50 feet high, and 2 feet diameter. It is also used for making canoes.

HAZOTSIHARIANA.—Is plentiful, large, and used for buildings.

HINTZY.—Elastic, very strong wood; good for oars and planking; grows to 60 or 70 feet, from 2 to 4 feet diameter. It is plentiful in the Analamazobra woods, but not so large; the stem grows to 30 or 40 feet before branching.

LANGOTRA.—Grows to a very large size—to 60 and 80 feet, and 4 to 5 feet diameter. It is used in making pirogues.

MARANGHODITRA.—Used for buildings, grows to 80 feet, and 4 feet diameter.

NANTO (1st kind).—Grows from 40 to 70 feet high, and to 2 or 3 feet diameter.

NANTO (2nd species).—Of same order and kind as 1st species.

NANTO (3rd species).

NANTO (4th species).

ORONDRY.—Good for making planks, grows from 40 to 50 feet high.

VINTANGHO.—For pirogues; 80 to 100 feet; dark; is plentiful.

VOANTSILAMY.—This is very abundant, growing to a height of 40 or 50 feet, with circumference of 4 to 6 feet. It is a good durable wood.

DURABLE WOODS USED FOR MAKING CANOES.

HAZOCEREA.—Red wood, plentiful.

INCI.—Yellow, abundant.

MARA.—Very durable black wood.

RANDRAHO.—Very abundant, but not so durable as the rest.

SUNGUT.—Brown, takes a good polish, and is very durable.

I collected a few specimens, with many names of native fruits, and have sent them to Sir Wm. Hooker, at Kew.[1]

[1] See Dr. Meller'a letter to Sir W. Hooker, Linnæan Journal, No. 26, p. 57, vol. vii.

Without specimens of the fruits the names are almost useless, except for any one intending to make a visit to collect these things. I therefore omit them.

I obtained also several native medicines, and the names of trees held in repute for medicinal virtues. Several of them are for blistering; one, a Ranunculus, is a very efficient blister. The small leaves of the herb are pounded in a mortar, and the expressed juice is bound on the part to be blistered.

Another, the Menerana, is the oil expressed from a fruit (a Euphorbia, I believe). It consolidates to the consistence of butter. It is the universal ointment of the country, and really seems to have good properties—stimulant for ulcers, bites of insects, and for the greater number of skin eruptions.

The Voingoamba is a herb (of the nettle tribe), the leaves of which have a volatile principle. They medicate a vapour bath with these, and have recourse to the bath in the cold stage of fever—in syphilis, &c., &c.

There are several emetics in use, the most common of which is their native salt (that got from the ashes of the Sirahaz plant). When this is not effective, they mix it with bruised leaves of the Mango, and drink the infusion; and if this is not sufficient, they drink an infusion of a powerfully emetic herb, the "Yazea-zea."

Sarsaparilla is abundant in the woods, and in common use as a soothing medicine in gastric disorders, dysentery, &c.

I took the names of many more, specimens of which I could not procure in the short time left after the "Gorgon" arrived.

(Signed) C. MELLER.

Art. XVII.—*On the Cost and Construction of the Railways in India.* By J. C. Marshman, Esq.

[*Presented by the Committee of Agriculture and Commerce, and read 20th April, 1863.*]

It is now an admitted truth, which is passing into the stage of a truism, that the most effectual means of "developing the resources of India, augmenting its value as a national possession, and promoting the prosperity of its inhabitants, are to be found in the general establishment of internal communications, and more especially in the construction of railroads. It will therefore be interesting to the members of this Committee to pass in brief review the exertions which have been made in the last ten years to establish a system of railways in India, together with the measures now under discussion to give full efficiency to it.

It is fifteen years since the Court of Directors[1] determined to sanction two railroads in the Bengal and Bombay Presidencies by way of experiment. Sir Macdonald Stephenson took a prominent part in the establishment of the railway system of India; and the merit of having brought it into actual existence at the Bengal Presidency, is to be ascribed to his exertions. It was under his guidance that the East India Railway Company was constituted in 1845 by a deed of settlement; but the plan was interrupted by the mercantile crisis in England shortly after, and it was not till March, 1849, that the enterprize received the sanction of the Court of Directors. At the same period, the Court also gave its sanction to the first line at Bombay—which had been projected by Mr. Chapman, and supported by some of the most enlightened officers at that Presidency—and three years after to one at Madras. But these three lines were merely experimental; that at Calcutta was to extend only to the collieries at Raneegunge, a distance of one hundred and twenty miles; that at Bombay, thirty-four miles to Callian, and that at Madras, to a distance of fifty miles towards the western coast.

But the necessity of extending these facilities of communication throughout India became daily more apparent to the public authorities in India. Fortunately for the interests of that country the Government was at the time in the hands of Lord Dalhousie, the ablest Indian statesman since the days of Warren Hastings,

[1] In the year 1848.

and a man of the largest and most comprehensive views. He had been President of the Board of Trade during the great railway mania in England, and the original regulation of that great national movement devolved on him. He had thus an opportunity of becoming thoroughly master of the whole question of railroads in all its bearings, and, what was of particular value to India, was fully aware of the errors which had been committed at the time in England, which he was powerless to avert, and which are computed to have entailed a loss on railway undertakings little short of one hundred millions sterling. He was now in a position to give the system of Indian railways the benefit of his experience, and to place it upon a sound basis.

While the Government in Leadenhall-street was pausing upon the threshold of this great enterprise, Lord Dalhousie drew up his celebrated Minute, in 1853, in which he sketched a general system of trunk railways for all India, urging the Court of Directors to abandon the timid plan of experiments, and adopt the bolder policy of giving the various provinces and the Presidencies the most ample benefit of this means of communication. This despatch arrived in England at a most happy period. The question of renewing the privileges of the East India Company was then under discussion in Parliament, and the neglect of internal communications, which was the disgrace of our Government, was urged by the enemies of the India House, as one of the strongest arguments for refusing to prolong those privileges. It was in these circumstances that the plan of Lord Dalhousie for the construction of railroads, at a cost of twelve millions sterling, under the guarantee of the State, arrived in England, and was at once adopted. The system of Indian railroads may be considered to have substantially commenced from that time.

The principle on which the system is based may be thus stated:—

The Government of India gives the land to the companies for a period of ninety-nine years, and thus the demands of landholders, which have been found in some cases so exorbitant in England, as also the heavy legal expenses connected with them, are avoided.

The Government guarantees for the same period interest at the rate of 5 per cent. on the capital subscribed and expended with its sanction.

After a period of twenty-five or fifty years from the signing of the contract, Government has the right of purchasing the railway at the mean market value in London of the shares during the three preceding years.

The shareholders have likewise the power of surrendering the works into the hands of Government, after giving six months' notice, and Government would, in that case, be bound to repay the entire sum expended with their sanction on the undertaking.

The Government in India and in England exercises an absolute control over all the operations of each company, prescribing the mode of management, and regulating the tariff for goods and passengers.

When the line or any portion of it is brought into operation, one-half the surplus profits beyond 5 per cent. is to be devoted to the repayment of the interest which Government has advanced during the construction of the line, together with simple interest at the rate of 5 per cent.; the other moiety of the profits will go to the shareholders. But when the Government advances, with interest, have been completely liquidated, the whole of the surplus profits will go to the shareholders. The Government is pretty generally understood to be restricted from the reduction of fares till the interest paid to the shareholders shall amount to 10 per cent.; though this appears to be a moot point.

The system of Indian railways was gradually expanded under the influence of Lord Dalhousie's Minute. Not only were the operations of the existing Calcutta, Madras, and Bombay railways extended from about 200 miles to 3,200, but, in the course of the next four years, five other trunk lines received the sanction of the India House. The lines to which the guarantee has been granted now extend over 4,679 miles, the longest of them being 1,369, and the shortest 29, miles in extent. The following is a list of the various companies, with their local objects, and the spheres of operation connected with each.

1. *The East India* Railway, which has nearly completed a line from Calcutta to Delhi, with a branch to the collieries at Raneegunge, and another to meet the Bombay line at Jubbulpore. The whole length will be 1,369 miles.

2. The *Great India Peninsular* line, with its sea terminus at Bombay. The object of this line is to connect the western capital and emporium, in one direction, with Madras, and in the other with Delhi and Calcutta, by a junction with the East India Railway to Jubbulpore. In order to develop the resources of the great cotton field of Berar, a line runs also from Bombay to Nagpore. The total length of the lines confided to this company is 1,266 miles.

3. The *Madras* line, which commences at that Presidency, and

proceeds in a western direction to a place called Arconum, where it bifurcates; one line taking a south-westerly direction to Beypore, on the Malabar coast, and the other a north-west direction to Bellary, to join the Bombay line, and thus complete the triangulation of India. Two branches strike off from the south-western line; the one to the Nilgherrees, 30 miles; the other to Bangalore, 80 miles. The entire length of line under the management of this company is 850 miles.

4. The *Bombay, Baroda, and Central India* Railway, which commences at Bombay, and runs in a northern direction for a distance of 310 miles to Ahmedabad, the object being to bring the extensive cotton districts of Surat into direct communication with the port of Bombay.

5. The *Sinde and the Punjab* Railways are under one and the same direction. The object of the Sinde Railway is to connect the port of Kurrachee with Kotree, near Hyderabad, on the Indus, the distance being 114 miles. At that point the company has a flotilla for the conveyance of traffic up the Indus to Moultan. They then construct a railway from Moultan to Lahore and Umritsir, a distance of 252 miles, and from thence down to Delhi, 300 miles. The entire length of the lines under the management of this Company is 666 miles.

6. The *Eastern of Bengal* Railway is intended to afford rapid and regular communication between Calcutta and the districts lying to the north and east of it. A line has already been opened to Koostee, on the Ganges, which will bring the produce of the districts above that place to the port of Calcutta, without encountering the delays and difficulties of the navigation through the Soonderbunds. The length is 110 miles.

7. The *Great Southern of India* Rail is constructed to give the provinces south of Madras the benefit of railway communication. The first portion of the line, which has been completed, runs from Negapatam, on the Coromandel coast, to Trichinopoly, a distance of 79 miles.

8. The *Calcutta and South-Eastern* Rail is of the length of 29 miles, and is designed to establish a communication between Calcutta and an auxiliary port on the Mutlah, in order to relieve the difficulties now experienced from the crowded state of the Hooghly, and the increasing embarrassments of the navigation of this stream.

The extent of the lines of railway for which the Government guarantee has been granted, and the sums which, according to the

present estimates, will be required for their construction, stand thus:—

	Miles.	Capital.
		£
1. East India Rail	1,369	24,750,000
2. Great India Peninsular..	1,266	12,000,000
3. The Madras Rail	850	8,500,000
4. The Bombay and Baroda	310	4,500,000
5. The Sinde and Punjab	666	7,700,000
6. The Eastern of Bengal	110	1,500,000
7. The Great Southern of India	79	660,000
8. The Calcutta and South-Eastern ..	29	500,000
	4,679	£60,110,000

But there is a principle of expansion in the expenditure which seems to baffle control, and there can be little doubt that the cost of the 4,679 miles which have received the sanction of the Government of India, will eventually exceed sixty millions sterling. This will be at the rate of £12,894 per mile. That sum, however, will include the cost of constructing some of the largest railway bridges over the Soane, the Jumna, and the Ganges; as well as the cost of crossing, on two separate lines, the stupendous Western Ghats, by ascending to an elevation of 2,000 feet. These latter works are considered the greatest engineering triumphs in the world, except the passage of the Summering, in Austria.

The guarantee of interest on the part of Government involves a charge on the Indian exchequer of about three millions a-year. But this sum is gradually lessened as different sections of the line are opened to traffic. There is no doubt that it will cease altogether when they are completed, and that Lord Dalhousie's prediction will be fully verified, that "the Government will never be called upon, after a line shall have been in full operation, to pay the interest guaranteed upon the capital." The sums which Government has advanced for interest during the construction of the lines—which bear interest at 5 per cent. until fully liquidated—will, at no distant period, be also refunded from their profits.

It will thus be eventually found that these grand undertakings, which will give such an impulse to improvement in India as was never dreamt of twenty years ago, will have been brought into full operation without having subjected the Government to the loss of a farthing. At the same time, the State will reap the highest benefit from them by their increasing to an indefinite extent the

security of our dominion, and reducing the military charge of defending it. It is thus that India will derive from its subjugation to England the advantage of drawing on an inexhaustible capital for those local improvements which its own resources could not have furnished. England will be repaid by a safe and remunerative investment for its capital, and by the increase of its traffic to India. Even without the facilities of the rail, the commerce of India in exports and imports had increased from twenty-five millions in 1848, to fifty-nine millions in 1858.

With regard to the completion of the most important of these lines, it may be observed that the East India Railway opened its line to Benares on the 22nd of December last, and that the line from Calcutta to the immediate vicinity of Delhi, a distance of 1,100 miles, through the entire length of the valley of the Ganges, will be opened by the middle of the present year. The Bombay lines will be completed before the end of 1865, when the vast cotton fields of Berar will be placed in direct communication with the port of Bombay. The Bombay and Baroda line is rapidly approaching its completion, when it is expected that the cotton from Surat and the neighbouring districts will reach Bombay in a purer state, and with greater expedition and economy. The line between Allahabad and Jubbulpore will be finished in less than four years; the great idea of Lord Dalhousie will then be realized, and troops from England may be landed at Bombay and sent to the North West Provinces in a little over 30 days. If these facilities of locomotion had existed at the time of the mutiny, it might have been crushed out before the end of the year in which it arose.

The fares for third-class passengers on these lines have been fixed at a much easier rate than prevails in England, because the great aim of the undertaking is to place the facilities of communication within the reach of all but paupers. Thus, while the charge for the first class on the East India Railway is $2\frac{1}{4}d.$ per mile, that for the third class is only $\frac{3}{8}$ of a penny, or less than two farthings a-mile. To understand the bearing of this low tariff on the cost of travelling, we must compare it with that of an English line. Take for example the Great Western; the distance from London to Bristol is about the same distance as from Calcutta to Raneegunge, that is 120 miles more or less.

The difference stands thus:—

	First Class.	Second Class.	Third Class.
Great Western	*s.* 20·10	15·8	9·10
East Indian	*s.* 22·6	11·4	3·10

Or, take the Brighton *excursion* trains, the cheapest in the world, a miracle of cheapness; the fare for a journey there and back, a distance of about 100 miles, is 30 pence. But the ordinary third-class fare on the Indian line is cheaper than this; and on the Bombay lines of the Great India Peninsular there is a fourth class still cheaper.

The result of the system has been most singular. When railways were first proposed for India, it was considered certain that they must depend for remuneration almost exclusively on the conveyance of goods, as the immutable habits of the natives would, it was affirmed, be an insuperable bar to the use of a means of conveyance so novel. But this idea has proved fallacious; the immutability was imaginary. Travelling by rail became at once a passion with the lower classes, and the number of third-class passengers conveyed on the East Indian line, though it is scarcely half open, is at the rate of two millions and a half a-year. But the rail has done more, it has broken the strength of caste, and a Brahmin of the purest descent, who would have considered it the greatest act of pollution to come in contact with a man of low caste, may be seen sitting side by side with him in a third-class railway carriage, in order to save his money.

The proportion of each class of passengers stands thus :—

1st class	1·2
2nd ,, ...	6·2
3rd ,, ...	92·6

Nine-tenths of the passengers, therefore, are of the third class, and it is their custom which furnishes the sinews of revenue.

The charge for the conveyance of goods has been fixed at a very moderate rate; for such articles as bricks, firewood, lime, ores, salt, and unwrought timber, it is a penny and half-a-farthing a-mile. Traffic, however, requires time to get out of the old grooves; and, except in the article of coal, the conveyance of goods has not yet kept pace with the transit of passengers. But, as the superior convenience and economy of using the rail becomes more apparent, there can be no doubt that the waggons of the rail will be crowded with goods, as much as the carriages now are with passengers.

The guage adopted throughout the Indian lines at all the Presidencies, is the medium of 5 feet 6 inches, which was considered best calculated to combine the advantages of economy and speed.

The expense of these railways has been furnished almost exclusively by English capital. The total number of proprietors of

all the eight lines is 26,160; of whom only 833 are native shareholders in India, or about 3 per cent. Of the sum expended in the construction of the lines, more than one half has been laid out in this country, in the purchase and transmission of iron rails, sleepers, girders for bridges, locomotives, and other stock; and the smaller moiety in India.

It is gratifying to observe that, while the law and Parliamentary expenses of the eight chief English railways have amounted to £3,700,000, the entire cost under these heads of the eight Indian railways, has been £21,700, not even one half per cent. of the English outlay.

The railways in India have been constructed on the principle of their being great trunk lines, intended as the main arteries of communication throughout the country; they have therefore been constructed of so solid and permanent a character as to ensure an uninterrupted traffic throughout the year, and to afford the means of high speed locomotion. But for the full development of the commerce of the country, it is necessary that they should be supplemented by light branch railways, to connect the opulent districts and towns lying on either side of the main line with it. There are few metalled roads in India, and the consequence is, that during the rainy season, all communication is interrupted, while even in the dry months it is slow, tedious, and expensive.

Branch lines have come into disrepute in England, because they have been found to impair the resources of the main lines, instead of augmenting them; in fact, to act as *suckers*, and not as *feeders*. But the case is different in India. Without the supplies furnished by such branch lines, the trunk lines must be to a great extent starved, and unable to afford that remuneration which, with adequate nutriment, they are certain to afford. In these branch lines, there is no necessity for aiming at a higher rate of speed than ten miles an hour. The conveyances need not be expensive, and the rails may be lighter, though it appears important that they should preserve the established and universal guage of 5 feet 6 inches. And these railways it will be found in every respect more economical and efficient to work by locomotive than by animal power.

Proposals have been submitted to the Government in India and in England by associations, distinct from the railway companies, who are willing to undertake the construction of light railways without a guarantee, but with such other assistance as may be found desirable. The cost of a single line, exclusive of the

construction of bridges, has been computed at from £4,000 to £6,000 per mile.

Of these companies, one, which is rather inappropriately called the Indian Tramway Company, inasmuch as it proposes to work the trains by steam, has drawn up a railway map of India, and marked down the various branches on each side, which appear to require the aid of feeders. The Company has already raised capital for the completion of one short line, at the Bombay Presidency, by way of experiment; and one of the Directors has been deputed to India to make the necessary arrangements with the local authorities.

Another association, called the Branch Light Railway Company, has been for some time in communication with the Government in India on the same subject. The Government was anxious to connect the city of Moorshedabad with the East India Rail at Nulhatty, a place twenty-seven miles distant, and had already thrown up the embankment and thoroughly metalled the road. At the request of this Company the road was transferred to it, and it will soon be furnished with permanent way and rolling stock. The same Company has gone up to the Government of India, and obtained a concession, which now awaits the sanction of the Secretary of State for India, embracing the entire provinces of Rohilkund, Oude, and Benares, with a population of ten or twelve millions; and the extent of rail contemplated in the arrangements will fall little short of six hundred miles. The importance of such light railways to bring the contributions of traffic and passengers from the interior to the main lines, and to distribute the traffic conveyed by them, cannot be exaggerated; and there can be no doubt of its eventually receiving such consideration at the India House as will result in attracting ten millions more of English capital to the system of locomotive communication in India.

ART. XVIII.—*On Manu, the progenitor of the Aryyan Indians, as represented in the hymns of the Rigveda.* BY J. MUIR, ESQ., D.C.L., LL.D.

[*Read 1st June*, 1863.]

IT is well known that the ordinary theory of the Indian books, from the Institutes of Manu downwards, is, that the inhabitants of Hindūstan were originally divided into four castes, Brahmans, Kshattriyas, Vaiśyas, and Sūdras, who are asserted to have sprung respectively from the mouth, arms, thighs, and feet, of the Creator.[1] It is true that in these books this theory is not consistently maintained, as we sometimes find a different origin assigned to the four classes.[2] In one passage, the Mahā-Bhārata (xii, 6939) even goes the length of denying that there was at first any distinction of castes, and of affirming that all the world was formed of Brahma, and that, at a period subsequent to their creation, men became divided into classes according to their different occupations.[3] In another part of the same great poem (i, 3138 f.) it is declared that the "descendants of Manu became known as Mānavas (or men); that men, Brahmans, Kshattriyas, and the rest, were sprung from this Manu."[4] These declarations are clearly inconsistent with the myth of the four castes having issued separately from the Creator's body. And the derivation of mankind, or, at least of the Aryyan Indians, from Manu, as their common ancestor, was evidently the

[1] See my "Original Sanskrit Texts," vol. i, pp. 5 f.; 11 f.; 14 f.; 33 f.

[2] Ibid., p. 35. For an account of various families, both of Brahmans and Kshattriyas, sprung from the same human ancestors, see the same work, pp. 45ff.

[3] Ibid., p. 40. The words of the original are *na viśesho 'sti varṇānām sarvam Brāhmam idam jagat, Brahmaṇā pūrva-sṛishṭam hi karmabhir varṇatām gatam.* See also the Vāyu Purāna, cited ibid., p. 29, and the passage from the Bhāgavata Purāna, quoted in p. 48, in both of which places it is declared that castes did not exist in the beginning.

[4] Ibid., p. 41. The original words are *Manor vamso mānavānām tato 'yam prathito 'bhavat. Brahma-kshattrādayas tasmād Manor jātās tu mānavāh.*

In the Sānkhya kārikā, verse 53, superhuman beings are said to belong to eight classes, creatures below men to five classes, but men only to *one: ashṭa-vikalpo daivas tairyag-yonascha panchadhā bhavati, mānushyas chaika-vidhah samāsato bhautikah sargah.*

common idea of the Hindus in the Vedic period, as I shall now proceed to show.[1]

(I). It must, indeed, be admitted that in the Purusha Sūkta, or 90th hymn of the 10th book of the Rigveda, the ordinary myth appears to be recognized in these words (v. 12): "The Brahman was his (Purusha's) mouth, the Rājanya was made his arms, the Vaiśya was his thighs; the Sūdra sprang from his feet."[2] But not to insist on the allegorical character of this passage, it is to be observed that the hymn in which it occurs is justly regarded by scholars as among the most recent in the Rigveda, which contains no other statement of the same kind, whilst in various passages it speaks of Manu as the father, or progenitor, of the authors of the hymns, and of the people to whom they addressed themselves. This will appear from the following texts:—

i, 80, 16. "Prayers and hymns have been formerly congregated in that Indra, in the ceremony which Atharvan, *father Manush*, and Dadhyanch celebrated."[3]

i, 114, 2. "Whatever prosperity or succour *father Manu* obtained by sacrifice, may we gain it all under thy guidance, O Rudra."

ii, 33, 13. "Those pure remedies of yours, O Maruts, those which are most auspicious, ye vigorous gods, those which are beneficent, those which *our father Manu* chose, those, and the blessing and succour of Rudra, I desire."

viii, 52, 1 (Sāma, v. i, 355). "That ancient friend hath been equipped with the powers of the mighty (gods). *Father*

[1] See the remarks which had previously been made on this subject by Nève (Mythe des Ribhavas, pp. 69–83), who dwells at length upon the fact, which he has well illustrated, of Manu being represented in the Rigveda as the parent of mankind, or specially of the Aryyas, and as the introducer of civilization. At the time (in 1847) when his work appeared, however, the first Ashtaka only of the R. V. had been published, and he was therefore unable to quote the passages relating to Manu which occur in the later books. His remarks, however valuable, do not therefore supersede the necessity of the fuller elucidation of the subject from more numerous texts, which I have here attempted. See also the late Dr. F. Windischmann's Ursagen der Arischen Völker; Kuhn's Zeitschrift für Vergl. Sprachf., iv, 88 ff; and Ad. Pictet's Origines Indo-Européennes, seconde partie, pp. 544 f., and 612–632.

[2] Sanskrit Texts, i, pp. 7–11.

[3] This verse is quoted in the Nirukta, where the words *Manush pitā* "father Manu," are explained as meaning "Manu the father of men." Sāyana interprets them as meaning "Manu the father of all creatures." In R. V., x, 82, 3, the words "our father and generator" are applied to Viśvakarman, the creator of the universe.

Manush has prepared hymns to him, as portals of access to the gods."[1]

x, 100, 5. "Through our hymn Indra has supported (our every?) joint. Brihaspati, thou art the prolonger of our life. Sacrifice is *Manu, our wise father*," &c.[2]

viii, 30, 2, 3. "Thus ye are praised, destroyers of enemies, gods worshipped by Manu (or the *manu*, or man), ye who are three and thirty. Do ye deliver, protect, and intercede for us; do not lead us far away from the *paternal path of Manu*."

On this verse Sāyana comments thus: "Manu is the *father of all*. Father Manu journeyed along a distant path. Do not lead us away from that path. Lead us along that path on which continence, the *agnihotra* sacrifice, and other duties have always been practised. But lead us away from the path which is different from that."

As in the preceding passages Manu is spoken of as the progenitor of the worshippers, so in the following the same persons are spoken of as his descendants:

i, 68, 4 (v. 7 in Prof. Aufrecht's ed). "He (Agni) who abides among the *offspring*[3] *of Manu* as the invoker (of the gods), is even the lord of these riches."

The commentator here explains the offspring of Manu as the race of worshippers.

i, 96, 2. "Through the primeval invocation, the hymn of Áyu, he (Agni) produced these *children of the Manus*."

The commentator here identifies Áyu with Manu, and interprets the lines thus: "Agni, being lauded by Manu, produced this offspring of the Manus." The third verse of this hymn is as follows: "praise, ye Aryyan people, him, who is the first performer of sacrifice." We shall see, further on, that the offspring of Manu and the Aryyan race are generally, if not always, regarded as identical.

iii, 3, 6. "Agni, together with the gods, and the children (*jantubhih*) of Manush, celebrating a multiform sacrifice, with hymns," &c.

iii, 60, 3. "The Ribhus have acquired the friendship of Indra; the active grandsons of Manu (*Manor napātah*) have run (?)" &c.

[1] I am indebted to Prof. Aufrecht for pointing out the meaning of this, to me, obscure verse; as well as for correcting my renderings of various other passages in this paper.

[2] Compare R. V., x, 53, 6, quoted below.

[3] *Manor apatye*. The Nirukta, 3, 7, gives *Manor apatyam Manusho vā* "the offspring of Manu, or Manush," as one definition of man.

"Manu" is here explained by Sāyana as meaning "man," meaning the sage Angiras.

iv, 37, 1. "Ye gods, Vājas, and Ribhukshans, come to our sacrifice by the path travelled by the gods, that ye, pleasing deities, may obtain a sacrifice among these people of Manush (*Manusho vikshu*) on auspicious days."

vi, 14, 2. "The people of Manush magnify in the sacrifices Agni the invoker."

viii, 23, 13. "Whenever Agni, lord of the people,[1] kindled, abides gratified among the people of Manush (*Manusho viśi*), he repels all Rakshases."

x, 80, 6. "People who are of the race of Manush (*viśo mānushīḥ*) worship Agni. Those who are sprung from Manush and Nahush (worship) Agni."

It is also to be observed that the words *manu* and *manush* are frequently used in the Rigveda, both in the singular and plural, to denote *men*,[2] or rather *men of the Aryyan tribes*. In the following passages the words are so used in the singular:—i, 130, 5; i, 140, 4; i, 167, 3; i, 180, 9; i, 189, 7; ii, 2, 8; iii, 26, 2; iii, 57, 4; iv, 2, 1; v, 2, 12; vii, 70, 2; viii, 27, 4; viii, 47, 4;[3] viii, 61, 2; viii, 76, 2; ix, 63, 8; ix, 65, 16; ix, 72, 4; ix, 74, 5; x, 25, 8; x, 40, 13; x, 99, 7; x, 104, 4; x, 110, 1, 7. In the text, x, 99, 7, the word is applied to an enemy (*druhvane manushe*).

In the next passages the same words in the plural are used for men, i, 181, 8; vii, 9, 4(?); viii, 18, 22; x, 91, 9; iv, 6, 11; v, 3, 4; x, 21, 7.

The words *mānava* (a regular derivative from *Manu*) and *mānusha* and *manushya* (which are regularly derived from *Manush*, a form peculiar to the Veda) are also of frequent occurrence in the hymns, in the sense of persons belonging to, or descended from Manu, or Manush; and would of themselves almost suffice to prove that in the Vedic age Manu was regarded as the progenitor of the people of whom these terms were descriptive. In later Sanskrit, as is well known, they are the most common words for men in general.

The adjectives *manushya*,[4] and *mānusha*, are also in constant use

[1] *Viśpati*. Compare R. V., vi, 48.8.

[2] See Wilson's Dict., under the word *Manu*, which, as the second sense, is said to mean "a man in general."

[3] *Ayashṭur manushyasya*, Sāyaṇa.

[4] In iv, 1, 13, the words *asmākam atra pitaro manushyāḥ* may mean "our fathers descended from Manu."

in the Rigveda in combination with the substantive *viś*, and occasionally with the substantives *kṛishṭi*, *kshiti*, *charshani*, and *jana*, to denote people descended from Manu, or tribes of men generally. The combination *mānushīr viśaḥ*, in one or other of its cases, is found in the following passages:—i, 148, 1; 3, 5, 3; 3, 6, 3; 4, 6, 7; 5, 8, 3; 5, 9, 3; 6, 48, 8;[1] 7, 5, 2; 7, 67, 7; 9, 38, 4; 10, 1, 4; 10, 69, 9; 10, 83, 2. *Charshanīnām mānushānām* occurs, iv, 8, 8; *mānushīnām kṛishṭīnām*, i, 59, 5; vi, 18, 2; *kshitīr mānushīḥ*, vi, 65, 1; *mānusho janaḥ*, v, 21, 2; vi, 2, 3; viii, 53, 10.[2]

In two passages (viii, 59, 11, and x, 22, 8), the word *amānusha* is applied to the Dasyus together with the other epithets, *anyavrata*, *ayajvan*, *adevayu*, *akarman*, *amantu*, "following other rites," "not sacrificing," "godless," "without ceremonies," "thoughtless." The other epithets are such as apply more properly to men than to demons; and if therefore it were certain that by Dasyus in these passages were meant the aboriginal tribes, we might suppose that the word *amānusha* might as well mean "not belonging to the race of Manush," as "not human," or "inhuman." In the verse preceding one of the passages I have quoted (x, 22, 7), however, this word is used as an epithet of the demon of drought, Sushṇa, where it must have the sense of "not human." And in ii, 11, 10, where the word *mānushaḥ*, applied to Indra, must have the sense of "friendly to man," the adjective *amānusha* which is applied to the Asura Vṛittra, must have the opposite signification of "hostile to man."

(II). From all that precedes, it is clear that the authors of the hymns regarded Manu as the progenitor of their race. But (as appears from many passages) they also looked upon him as the first person by whom the sacrificial fire had been kindled, and as the institutor of the ceremonial of worship; though the tradition is not always consistent on this subject. In a verse already quoted (i, 80, 16) Manu is mentioned in this way, along with Atharvan and Dadhyanch, as having celebrated religious rites in ancient times. The following further passages refer to him as the kindler of fire, and offerer of oblations:—

i, 13, 4. "O Agni, lauded, bring the gods hither in a most

[1] The first line of this verse is as follows: "Thou, Agni, art the household-lord (*gṛiha-patiḥ*) of all the people descended from Manush" (*viśvāsām viśām mānushīnām*); compare v, 8, 2; vi, 15, 1; vi, 15, 19; vii, 7, 4; viii, 23, 13; and iii, 29, 1. In vii, 5, 3, *viśaḥ asiknīḥ*, "black tribes," are mentioned.

[2] The words *mānushā yugā* occur in R. V., v, 52, 4; vi, 16, 23; x, 140, 6 (=S. V., 2, 1171).

pleasant chariot. Thou art the invoker (of the gods) ordained by Manush."[1]

i, 14, 11. "Thou, Agni, an invoker ordained by Manush, art present at the sacrifices: do thou present this our oblation." (See also R.V., iii, 2, 15.)

vi, 16, 9. "Thou art the invoker ordained by Manush, the visible bearer (of our oblations), most wise: Agni, worship the people of the sky (*divo viśaḥ*).

viii, 19, 21. "With a hymn I laud that adorable bearer of oblations ordained by Manush,[2] whom the gods have sent as a ministering messenger."

viii, 34, 8. "May the adorable invoker ordained by Manu bring thee (Indra) hither among the gods," &c.

i, 36, 19. "Manu has placed (or ordained) thee (here), a light to all mankind."

ii, 10, 1. "When Agni, the invoker, like a first father (is) kindled by Manush (or man)[3] on the place of sacrifice," &c.

[1] The compound word which I have rendered "ordained by Manu" is in the original *Manur-hita*. That the sense I have given is the true one, appears, I think, from i, 36, 19, where the same root, *dhā*, from which *hita* (originally *dhita*) comes, is used, joined with the particle *ni*. The same participle *hita* is used in vi, 16, 1, where it is said, "Thou, Agni, the offerer of all sacrifices, hast been placed, or ordained, among the race of Manu by the gods." The compound *manur-hita* occurs also in the following texts, where, however, it has more probably the sense of "good for man," viz.:—i, 106, 5. "Brihaspati, do us always good: we desire that blessing and protection of thine which is *good for man*." (Sāyana says that here *manur-hitam* means either "placed in thee by Manu, *i.e.*, Brahmā," or, "favourable to man.") vi, 70, 2. "Heaven and earth, ruling over this world, drop on us that seed which is *good for man*." x, 26, 5. "He (Pūshan) who is a *kind to man*, or, *appointed by Manu*," &c.

In i, 45, 1, we have the words *yajā svadhvaram janam manu-jātam*, "worship, o Agni, the race (of gods), rich in sacrifices, *sprung from Manu*," &c., which Sāyana explains, "generated by the Prajāpati Manu." Benfey, in his translation of the R. V. (Orient und Occident, i, 398, note) says that the words may mean either, in the later sense, produced by Manu, as the creator of a mundane period with all its contents, or, in the older sense, established as objects of veneration by Manu, to whom the ordering of human life appears to be ascribed in the oldest Indo-Germanic legends."

[2] Though the word *manur-hita* is here interpreted by Sāyana as meaning "placed by Manu Prajāpati who sacrificed," it might also signify "friendly to men," as Agni is also said to have been sent by the gods.

[3] The Satapatha Brāhmana (i, 4, 2, 5), quoted by Weber (Ind. Stud, i, 195), thus explains the words *deveddho Manv-iddhah*:—"The gods formerly kindled it (fire): hence it is called 'god-kindled.' Manu formerly kindled it; and hence it is called 'kindled by Manu.'" The Aitareya Brâhmana, however, explains the word *Manv-iddhah* from the fact that "*men* kindle it."

vii, 2, 3. "Like Manush, let us continually invoke to the sacrifice, Agni who was kindled by Manu."

Sāyana explains the last words as meaning "formerly kindled by the Prajāpati Manu."

vi, 10, 2. "O Agni, brilliant, very lustrous, invoker, kindled by the fires of Manush," &c. (?)

viii, 10, 2. "Or as ye (O Aświns) besprinkled the sacrifice for Manu, think in like manner of the descendant of Kaṇva."

x, 63, 7. "O ye Ādityas, to whom Manu, when he had kindled the fire, presented with seven hotri priests, the first offering, together with a prayer,—bestow on us secure protection," &c.

x, 69, 3. "That lustre of thine, O Agni, which Manu, which Sumitra, kindled, is this same which is now renewed. Shine forth, thou opulent deity," &c.

i, 76, 5. "As thou, thyself a sage, didst, with the sages, worship the gods with the oblations of the wise Manu, so to-day, Agni, most true invoker, do thou worship them with a cheerful flame."

iii, 60, 6. "These days are fixed for thee (Indra), the observances of the gods, with the ordinances of Manu (or man)."[1] (See iii, 3, 1.)

v, 45, 6. "Come, friends, let us celebrate the ceremony whereby Manu conquered Viśiśipra," &c.

i, 139, 9. "Dadhyanch, the ancient Angiras, Priyamedha, Kaṇva, Atri, Manu, know my (Paruchhepa's?) birth; those who were before me, Manu, know it."

(Though this passage does not connect Manu with the institution of sacrifice, it may be introduced here as conveniently as elsewhere.)

iii, 3, 2. "The powerful god (Agni) hastens between the two worlds, abiding as the invoker, the priest of Manu (or man)."

iv, 26, 4. "When the swift-winged bird, borne by his own power without wheels, brought to Manu the oblation desired by the gods."

Sāyana explains this of the soma being brought from heaven to the Prajāpati Manu.

[1] In the following passage the words *Manusho dharīmani* are interpreted by Prof. Roth as meaning "by the ordinance" of Manu (or man); but Sāyana assigns to *dharīman* the signification of "altar."

i, 128, 1. "This Agni, an adorable invoker, has been born on the sacrificial hearth of Manu (or man), for the ceremony of the worshippers, for his own ceremony. The irresistible invoker hath sat down on the place of sacrifice, surrounded, on the place of sacrifice."

v, 29, 1. "They (the Maruts) have established three lights, three celestial luminaries, at the sacrifice of Manush (or man), &c. 7. Agni, a friend, quickly cooked for his friend, through the power of the latter, three hundred buffaloes. Indra drank at once three lakes (or cups) of Manush (or man), the soma which had been poured out for the slaughter of Vṛittra."

vi, 4, 1. "Just as, O invoker, son of strength, thou at Manush's ceremonial dost (didst?) worship the gods with sacrifices, so too to-day," &c.

Manush is here interpreted by Sāyana as meaning "the Prajāpati Manu who sacrificed." On iii, 26, 2, he explains the same word as meaning "man"; but the context is different. In some passages it is difficult to say whether the patriarch Manu, or man merely, is meant; and in some cases, I have given an alternative rendering. But wherever Manu is referred to as having been an example in former times, we may reasonably suppose that the patriarch is referred to. In many of the passages I have quoted under this head, however, there is no such distinct reference to ancient times; and therefore such texts ought perhaps to be classed among those formerly cited where *Manu* means simply *man*.

ix, 96, 12. "As thou, Soma, didst flow purely for Manu, source of life, destroyer of foes, dispenser of wealth, rich in offerings, so too now flow purely," &c.

vi, 15, 4. "Thou seekest Agni, your celestial guest, the sacrificial invoker for Manush (or man)," &c.

vii, 8, 2. This grand Agni has been known as the great and gladdening invoker for Manush (or man)," &c.

vii, 35, 15. "Those who are adorable among the adorable gods, objects of worship to Manu (or man), immortal, skilled in religious rites," &c.

The last words are repeated in x, 65, 14.

vii, 73, 2. "The dear invoker for Manush (or man) has been placed," &c.

x, 36, 10. "Ye who are the objects of worship to Manu (or man), hear us: give us, O gods, that which we seek."

See viii, 30, 2, above, p. 408.

x, 51, 5. "Come (O Agni) a pious Manu, desirous of sacrifice, having made preparations. Thou dwellest in darkness, Agni, make easy paths leading to the gods (or, for the gods to travel); carry away our oblations with good will."

Compare x, 100, 5, above, p. 408.

x, 53, 6. "Spinning the thread, follow the light of the sky.

Keep the luminous paths formed by the understanding (or, the hymn). Weave ye a smooth work of the encomiasts. Be a Manu, and generate the divine race."

This verse is translated and explained by Prof. Müller in his article on the "Funeral rites of the Brahmans," in the Journal of the German Oriental Society for 1855, p. xxii. I need not refer to the rest of his explanation, which does not bear upon the present subject. I will merely quote his interpretation of the last clause: "Be Manu, *i.e.*, do like Manu (*manush-vat*) who first kindled the sacrificial fire, and generate the divine man, *i.e.*, Agni."

x, 66, 12. Let us become *Manus*, *i.e.*, imitators of Manu (?) for your worship," &c.

There is also a class of passages in which the example of Manush is referred to by the phrase *manush-vat*, "like Manush," or, "as in the case of Manush." Thus in i, 44, 11, it is said, "Divine Agni, we place thee, like Manush," &c.

v, 21, 1. "Agni, we place thee like Manush, we kindle thee like Manush. Agni, Angiras, worship the gods like Manush, for him who adores them."

viii, 27, 7. "We invoke thee, Varuṇa, having poured out Soma, and having kindled fire, like Manush."

viii, 43, 13. "Like Bhṛigu, like Manush, like Angiras, we invoke thee, Agni, who hast been summoned to blaze." 27. "Agni, most like to Angiras, whom men kindle like Manush, attend to my words."

See also i, 31, 17; i, 46, 13; i, 105, 13, 14; ii, 5, 2; ii, 10, 6; iii, 17, 2; iii, 32, 5; iv, 34, 3; iv, 37, 3; vii, 11, 3; x, 70, 8; x, 110, 8.

The Satapatha Brahmana, i, 5, 1, 7 (quoted by Weber, Ind. Stud., i, 195), explains thus the word *Manush-vat*:—"Manu formerly sacrificed with a sacrifice. Imitating this, these creatures sacrifice. He therefore says, *Manushvat*, 'like Manu.' Or, he says 'like Manu,' because men speak of the sacrifice as being Manu's."[1]

Manu is not, however (as I have above intimated), always spoken of in the hymns, as the first, or only, kindler of fire. In i, 80, 16, already quoted, Atharvan and Dadhyanch are mentioned along with him as offerers of sacrifice.

[1] The same work in the same passage thus explains the phrase, *Bharata-vat*. "He bears (*bharati*) the oblation to the gods; wherefore men say, Bharata (or 'the bearer') is Agni. Or, he is called Bharata (the 'sustainer') because, being breath, he sustains these creatures." This phrase may, however, refer to the example of King Bharata. See below, p. 425.

In the following verses Atharvan is mentioned as having generated fire:—

vi, 15, 17. "The wise draw forth this Agni, as Atharvan did," &c.

vi, 16, 13, (= S. V, 1, 9; Vāj. Sanh. xi, 32). "Agni, Atharvan drew thee forth from the lotus leaf," &c. 14. "Thee the rishi Dadhyanch, son of Atharvan, kindled," &c.

In the Vājasaneyi Sanhitā, the first of these verses is immediately preceded by the following (xi, 32): "Thou art adorable, all-sustaining. Atharvan was the first who drew thee forth, Agni."

Again it is said in the Rigv. x, 21, 5. "Agni, produced by Atharvan, knows all hymns, and has become the messenger of Vivaswat."

Again Atharvan is thus mentioned: i, 83, 5. "Atharvan was the first who by sacrifices opened up the paths; then the friendly Sun, the protector of rites, was produced," &c. x, 92, 10. "Atharvan, the first, established (the worship of the gods?) with sacrifices. The divine Bhrigus by their wisdom followed the same course." [1]

The next text of the Rigveda speaks of the Bhṛigus as the institutors of sacrifice by fire:—

i, 58, 6. "The Bhṛigus have placed thee, o Agni, among men, as an invoker, beautiful as riches, and easily invoked for men," &c.

ii, 4, 2. "Worshipping him (Agni) in the receptacle of waters, they placed him among the people of Ayu."

x, 46, 2. "Worshipping and desiring him with prostrations, the wise and longing Bhṛigus have followed him with their steps, like a beast who had been lost, and have found him concealed in the receptacle of waters." (i, 65, 1).

vi, 15, 2. "Thee (Agni) whom, residing in the tree, the Bhṛigus have placed, adorable and high-flaming, like a friend," &c.[2]

[1] In the following texts also Atharvan and Dadhyanch are spoken of, viz.:—i, 116, 12; i, 117, 22; i, 119, 9; vi, 47, 24; ix, 108, 4; x, 14, 6; x, 48, 2; x, 87, 12.

[2] In the following passages also the Bhṛigus are mentioned as connected with the worship of Agni:—

i, 60, 1. "Mātariśwan has brought Agni a friend to Bhṛigu."

i, 127, 7. "When the Bhṛigus, uttering hymns, aspiring to the sky, making obeisance, worshipped him (Agni),—the Bhṛigus drawing him forth from the wood, &c."

i, 143, 4. "Whom (Agni) the Bhṛigus have obtained, the source of all wealth," &c.

In other places the gods, as well as other sages, are mentioned as the introducers of fire:—

i, 36, 10. "Thou, O bearer of oblations, whom the gods placed here as an object of adoration to Manu (or man); whom Kaṇva, whom Medhyātithi, whom Vṛishan, whom Upastuta (have placed) a bringer of wealth," &c. Compare vi, 16, 1, quoted above, p. 411, note.

x, 46, 9. "Mātariśwan and the gods have established, as the earliest adorable object of worship to Manu (or man), that Agni whom heaven and earth, whom the waters, whom Twashṭṛi, whom the Bhṛigus, have generated by their powers."[1]

iii, 5, 10. "When Mātariśwan kindled for the Bhṛigus Agni, the bearer of oblations, who was in concealment."

iv, 7, 1. "Whom (Agni) Apnavāna and the Bhṛigus kindled," &c.

viii, 43, 13 (see above, p. 414).

viii, 91, 4. "Like Aurvabhṛigu, like Apnavāna, I invoke thee, pure Agni, who abidest in the ocean."

x, 122, 5. "The Bhṛigus kindled thee by their hymns."

See also i, 71, 4; iii, 2, 4; viii, 43, 13 (above p. 414); i, 148, 1.

[1] In his illustrations of the Nirukta, p. 112, Professor Roth, in explaining the text R. V., vi, 8, 4 ("Mātariśwan, the messenger of Vivaswat, brought Agni Vaiśwānara from afar") makes the following interesting observations on the Vedic conceptions regarding the genesis of fire: "The explanation of Mātariśwan as Vāyu" (which is given by Yāska) "cannot be justified by the Vedic texts, and rests only upon the etymology of the root *śvas*. The numerous passages where the word is mentioned in the R. V. exhibit it in two senses. Sometimes it denotes Agni himself, as in the texts i, 96, 3, 4; iii, 29, 4 (11?); x, 114, 1, &c.; at other times, the being who, as another Prometheus, fetches down from heaven, from the gods, the fire which had vanished from the earth, and brings it to the Bhṛigus, i, 60, 1; i, 93, 6; iii, 2, 13; iii, 5, 10; iii, 9, 5. To think of this bringer of fire as a man, as a sage of antiquity, who had laid hold of the lightning, and placed it on the altar and the hearth, is forbidden by those texts which speak of him as bringing it from heaven, not to mention other grounds. As Prometheus belongs to the superhuman class of Titans, and is only by this means enabled to fetch down the spark from heaven, so must Mātariśwan be reckoned as belonging to those races of demigods, who, in the Vedic legends, are sometimes represented as living in the society of the gods, and sometimes as dwelling upon earth. As he brings the fire to the Bhṛigus, it is said of these last, that they have communicated fire to men (*e.g.*, in i, 58, 6), and Agni is called the son of Bhṛigu (*Bhṛigavāṇa*). Mātariśwan also must be reckoned as belonging to this half-divine race. I am not disposed to lay any stress on the fact, that in the passage before us (vi, 8, 4) he is called the messenger of Vivaswat; but to conjecture that the verse has become corrupt in the course of tradition, as Agni himself is elsewhere called the messenger of Vivaswat, the heavenly light (iv, 7, 4; viii, 39, 3, and elsewhere); and the same sense can be obtained here by the slight alteration of *dūtaḥ* into *dūtam*." (The sense thus becomes: 'Mātariśwan brought from afar Agni Vaiśwānara, the messenger of Vivaswat.') "Of these two senses of the word Mātariśwan to which I have above alluded, the first, according to which it denotes fire itself, appears to

But to return to Manu. Although the distinction of having been the first to kindle fire is thus, in various passages, ascribed to Athaṙvan or the Bhṛigus, none of these personages is ever brought forward as disputing with Manu the honour of having been the progenitor of the Aryyan race. In this respect the Vedic tradition exhibits no variation.

(III). The following passages represent Manu (or, perhaps in most cases, the Aryyan man in general) as being the object of some special favour or intervention on the part of some of the gods:—

i, 31, 3. "Agni, thou, the first, didst become manifest to Mātariśwan, and to Vivaswat through desire of sacrifice, &c. 4. Agni, thou didst reveal the sky to Manu, to the pious Purūravas, (thyself) more pious," &c.

On this passage Benfey remarks: "Vivasvat (the remover of night, a being who stands in the closest connection with the Sun) wished to sacrifice, and chose fire for the accomplishment of the sacrifice. Manu is the son of the Vivasvat mentioned in the foregoing verse, who instituted (i, 14, 11) for mankind the fire which his father had chosen for sacrifice."

i, 112, 16. "Come, Aświns, with those succours whereby, O heroes, ye sought out a path (of deliverance) for Śayu, for Atri, and formerly for Manu, whereby ye shot arrows for Syūmaraśmi 18, whereby ye preserved the hero Manu with food."[1]

me to be the original one. Fire is swelling in his mother (*mātari*), proceeding forth from her (from the root *śu, śvi*, Benfey's Gloss., p. 147), whether we regard this mother as the storm-cloud, or as the wood (*araṇi*) from which by friction smoke, sparks, and flames proceed. It may also be mentioned that the same function of bringing down fire is ascribed in one text (vi, 16, 13) to Atharvan, whose name is connected with fire, like that of Mātariśvan; and also that the sisters of Atharvan are called Mātariśwarīs in x, 120, 9."

[1] In none of the passages hitherto adduced is any epithet except "father," or "hero" applied to Manu.

In the 4th Vālakhilya, following R. V., viii, 48, however, this verse (the first) occurs:—"As in the case of Manu Vivaswat (*Manau Vivaswati*) thou, Sakra, didst drink the Soma which had been poured forth," &c. (see Roth in Z. D. M. G., iv, 431). Manu Sāmvarani is similarly mentioned in the first verse of the 3rd Vālakhilya.

And in the following passage a personage called Manu Sāvarni, who appears to have been a contemporary of the author of the hymn, is celebrated for his generosity:—

x, 62, 8. "Let this Manu now increase; let him shoot up like a sprout,—he who straightway lavishes for a gift a thousand, a hundred horses. 9. No one equals him, who reaches at it were the summit of the sky. The liberality of the son of Savarnā is wide as the sea. 11. Let not Manu, the leader of the people, who bestows thousands, suffer injury. Let his bounty go on vying with the

This passage, as far as it concerns Manu, is thus explained by Sāyana: "And with those succours, whereby ye made a path, a road which was the cause of escape from poverty, by sowing barley and other kinds of grain, &c., for Manu, the royal rishi of that name; according to another text" (i, 117, 21). In his note on verse 18, Sāyana adds that the grain had been concealed by the earth.

i, 117, 21. "Sowing barley with the plough, ye potent Aświns, milking forth food for Manusha (or man), blowing away the Daśyu with the thunderbolt, ye have made a broad light for the Aryya."

Sāyana says, that the term *manusha* in this passage is a synonym of Manu, and connects with it the word *āryya* as an epithet.[1] The next passage refers to the same legend:—

viii, 22, 6. "Succouring Manu (or man), ye (Aświns) cultivate with the plough the primeval barley in the sky," &c. According to Sāyana, Manu here means a "king of that name."

(The same expression, "seeking out a path for Manu," which we have found in i, 112, 16, occurs in another passage:—

sun. May the gods prolong the life of the son of Savarnā; during which let us enjoy food."

In this passage this Manu is represented as the son of Savarna, or Savarnā. In R. V., x, 17, 1, 2, the word Savarnā occurs, but it appears to be rather an epithet of the wife of Vivaswat, than her name.

"1. Twashtri makes a marriage for his daughter. This whole world assembles. The mother of Yama, being married, became the wife of the mighty Vivaswat. 2. They concealed her, the immortal, from mortals: making her of the same colour or nature (*savarṇā*), they gave her to Vivaswat," &c.

In later Indian mythology, Yama and Manu are regarded as brothers, the sons of Vivaswat, or the sun, by his wife Sanjnā. The Manu Sāvarni is, however, said to be another son of Vivaswat, begotten by him on another wife, Chhāyā, along with Śanaiśchara and Tapatī. Wilson's Vishnu. Pur., p. 266. This Manu Sāvarni is, according to the same authority, said to preside over the future eighth Manvantara, and takes his appellation of Sāvarni from being of the same caste (*Savarṇa*) as his elder brother, the Manu Vaivaswata (p. 267).

[1] This verse is quoted in the Nirukta, vi, 26, and is explained by Roth in his illustrations of that work, p. 92. He remarks:—"It appears to me that the explanation of the word *vṛika* (wolf), as meaning 'plough,' though in itself possible is, nevertheless, a rationalistic one, and that we rather have here an allusion to some myth. In viii, 22, 6, also we read, "For the pleasure of man ye have formerly in heaven ploughed barley with the wolf. That *dhamantā* has here its proper sense (of 'blowing'), and consequently refers to a particular trait of the legend which is not otherwise known to us, cannot admit of doubt, if we compare ix, 1, 8, *dhamanti bākuram dṛitim*, 'they blow the crooked (?) skin.' *Bakura*, perhaps, denotes a crooked wind-instrument, which the Aświns employed to terrify their enemies, and *bākura*, as an epithet of the skin, might designate one in the shape of a *bakura*."

v, 30, 7. "When, seeking out a path for Manu (or man), thou didst overturn the head of the Dāsa Namuchi.")

The following passages also refer to favours shown by the gods to Manu or man:—

x, 76, 3. "This is his oblation. May he remove sin. Let him run his course, as formerly for Manu," &c.

x, 104, 8. "Thou foundest the ninety-nine streams as a path for the gods for Manu (or man)," &c.

i, 165, 8. "I, bearing the thunderbolt, have made for Manu (or man) these all-gleaming, flowing waters."

iv, 28, 1. "With thee for a companion, Soma, and in thy fellowship, Indra then made the waters to flow for Manu (or man)," &c.

v, 31, 6. "I declare, Maghavat, the earlier deeds, and the latter (acts), which thou hast performed, when thou, O mighty one, didst sustain both worlds, conquering for Manu (or man) the gleaming waters."

i, 166, 13. "With this (favourable) disposition, having lent an ear to Manu (or man), those heroes (the Maruts) became known at once by their mighty acts."

iii, 34, 4. "He (Indra) kindled for Manu (or man) the brightness of the days; he discovered a light for the great conflict."

vi, 49, 13. "Vishnu, who thrice measured the terrestrial regions for Manu when distressed."

Sāyana interprets this of "Manu the Prajāpati, when injured by Asuras;" but gives no further explanation.

vii, 100, 4. "This Vishnu strode over this earth, bestowing it on Manush (or man) for an abode."

(Compare i, 100, 18; ii, 20, 7.)

vii, 91, 1. "They (the gods) displayed the dawn with the sun to Vāyu and Manu when distressed."

viii, 15, 5. "Exulting with that exhilaration, whereby thou didst discover the luminaries to Áyu, and to Manu, thou art lord of this sacrificial grass."

Sāyana explains Áyu as the son of Urvaśī, and Manu as the son of Vivaswat, and says that Indra disclosed the heavenly lights by driving away Vṛittra, &c., who concealed them.

x, 43, 4. "The light of them (the Soma libations?) has shone forth with power. The heaven hath disclosed a noble light to Manu (or man). 8. Maghavat has discovered a light for the Manu or man who presents libations, who is prompt in liberality, and who offers sacrifice."

viii, 27, 4. "May all the (gods) possessors of all wealth, and

repellers of foes, be a cause of prosperity to Manu (or man). 21. O ye possessors of all wealth, confer riches on the wise Manu (or man) who offers oblations."

Sāyana explains Manu in the 4th verse, as "the worshipper," and in the 21st verse, as "a rishi of that name," viz., the speaker himself.

x, 11, 3, "Beneficent, vigorous, renowned, glorious, Ushas dawned for Manu, when for the sacrifice they generated the ardent Agni for the work of the eager worshippers."

(IV). In the following passages Manu or his descendants appear to be placed in opposition to the Dasyus (whether we understand the latter of aboriginal tribes, or hostile demons), and identified with the Aryyan race:—

i, 130, 8. "Indra who bestows a hundred succours in all battles, in heaven-conferring battles, has preserved in the conflict the sacrificing Aryya. Chastising the neglectors of religious rites, he has subjected the black skin to Manu."

Compare i, 117, 21, above.[1]

ii, 20, 6. "May the most mighty god, renowned as Indra, be exalted for the sake of Manu. Self-reliant, may he violently overturn the dear head of the destructive Dāsa. 7. This Indra, the slayer of Vṛittra, the destroyer of cities, scattered the Dasyu (hosts) sprung from a dark womb. He produced for Manu the earth and the waters; at once he fulfilled the desire (or, he always strengthens the renown) of his worshipper."

iv, 26, 1. "I was Manu, and the Sun; I am the wise rishi Kashīvat. I subdue Kutsa the son of Arjuni; I am the sage Uśanas; behold me. 2. I gave the earth to the Āryya; I (gave) rain to the sacrificing mortal. I have led the sounding waters; the gods followed my will."

Indra is supposed to be the speaker in these verses. Sāyaṇa understands the word *āryya* of Manu. See Sanskrit texts, vol. ii, p. 376, and note.

vi, 21, 11. "Do thou, a wise god, the son of strength, approach my hymn with all the adorable (deities); who have Agni on their tongues, who frequent religious rites, and who made Manu superior to the Dāsa."

viii, 87, 6. "For thou, Indra, art the destroyer of all the cities, the slayer of the Dasyu, the promoter of Manu, the lord of the sky."

ix, 92, 5. "Let this (spot) where all the poets have assembled,

[1] The same contrast is drawn between the *Āyus* and *Dasyus* in vi, 14, 3:—"Overcoming the Dasyu, the *Āyus*, by rites seeking to vanquish the rite-less."

be truly the abode of the pure god (Soma): since he has made light and room for the day, has protected Manu, and repelled the Dasyu."

(Compare iii, 34, 9: "Having slain the Dasyu, he has protected the Āryyan colour.")

x, 49, 7. "I (Indra) move around, borne with power by the swift steeds of the Sun. When this libation of Manu summons me to splendour, I drive away with my blows the vigorous Dāsa."

x, 73, 7. "Thou didst slay Namuchi seeking the sacrifice, making the Dāsa devoid of guile to the ṛishi. Thou didst make for Manu beautiful paths leading as it were straightway to the gods."[1]

In the set of passages last quoted, the descendants of Manu appear, as I have said, to be identified with the Aryyan Indians, and to be contrasted with the Dasyus, or enemies of the Aryyas, whether we regard these enemies as being the aboriginal tribes, or as terrestrial or aerial demons.

The descendants of Manu are, as we have seen, spoken of as worshippers of the gods, as those among whom Agni has taken up his abode.

Frequent mention is also made in the Rigveda of five tribes, under the appellations of *pancha-janāḥ*, *pancha-kṛishṭayaḥ*, *pancha-kshitayaḥ*, &c. These five tribes are often alluded to as worshippers of Agni, and the other Aryyan deities. Unless, therefore, we are to suppose that these deities were adored by non-Aryyan as well as Aryyan races, it would appear to result that, whenever the five tribes are spoken of as worshippers of these gods, they must be regarded as identical with the Aryyas, or the descendants of Manu; of whom they would thus represent a five-fold division. The grounds which exist for this conclusion will be seen from a comparison of the following passages, which I shall quote as the basis of my remarks:—

The term *pancha-kṛishṭayaḥ* is that employed in the first set of texts which I shall adduce:—

ii, 2, 10. "May our glory shine aloft over the *five tribes*, like the Sun, unsurpassable."[2]

iii, 53, 16. "May the goddess who ranges everywhere quickly bring to us food more than there is among the *five tribes*."

[1] This verse is translated by Prof. Benfey in his glossary to the Sāma veda under the word *Namuchi*.

[2] In iii., 49, 1, mention is made not of the five tribes, but of *all* the tribes: 'Praise the great Indra, in whom *all the tribes* who drink soma have obtained their desire."

iv, 38, 10 (Nirukta, x, 31). "Dadhikrā has pervaded the *five tribes* with his might, as the waters with light."

The same words, with the omission of Dadhikrā, occur, x, 178, 3 (Nir., x, 29).

vi, 46, 7. "Indra, whatever strength, or power, there is in the tribes of Nahush (*nāhushīshu kṛishṭishu*), or whatever glory belongs to the *five tribes*, bring it (for us); yea, all energies together."

x, 119, 6. "The five tribes appeared to me (Indra) not even as a mote."[1]

In the verses next to be quoted, the term *pancha kshitayaḥ* is employed:—

i, 7, 9. "That Indra, who alone rules over men and riches, over the *five tribes*."

i, 176, 3. "In whose hands are all the riches of the *five tribes*."

v, 35, 2. "Whether, Indra, four (tribes) or, O hero, three (tribes) are thine; or whatever succour belongs to the *five tribes*, bring that to us."

vii, 75, 4. "She (Ushas) arriving from far, straightway encircles the *five tribes*."

vii, 79, 1. "Ushas hath dawned salutary to men, awaking the *five tribes of Manush* (*pañcha kshitīr mānushīḥ*)." This verse is important as actually connecting the five tribes with the word *mānushīḥ*. In Atharva veda, iii, 24, 2, we have in like manner *mānavīḥ pañcha kṛishṭayaḥ*.

The phrase employed in the next verse is *pancha mānushāḥ*:—

viii, 9, 2. "Whatever grandeur there is in the firmament, in the sky, or among the *five tribes of Manush* (*pancha mānushān anu*), confer all that on us, Aświns."

In the Atharva veda we find *pancha-mānavāḥ*. Thus in v, 17, 9, it is said:—"The Brahman is the master, and not the Rājanya, or the Vaiśya. This the Sun goes declaring to the *five tribes of Manu*." And in xii, 1, 15, it is said:—"Thine, O earth, are these *five tribes of Manu*, to whom, mortals, the Sun, rising, conveys undying light by his rays."

Pancha-janāḥ is the term used in the following passages:—

i, 89, 10. "Aditi is the *five tribes*," &c.

iii, 37, 9. "I desire, Indra Śatakratu, those powers of thine which are in the *five tribes*."

[1] I here follow Prof. Roth's rendering in his Dictionary, ii, 1077, under the root 2 *chhad*. In the Atharvaveda, xii, 1, 42, the words, these *five tribes*, also occur.

iii, 59, 8. "The *five tribes* have done homage (?) to Mittra, who is mighty to succour."

vi, 2, 4. "Agni, whom, abounding in oblations, the *five tribes*, bringing offerings, honour with prostrations, as if he were a man (*āyum na*)."

Sāyaṇa here defines the five tribes as "priests and offerers of sacrifices" (*ṛitvig-yajamāna-laxanāḥ*).

viii, 32, 22. "From far pass by the three (points?), pass by the *five tribes*, Indra, beholding the cows."

ix, 65, 23. "Or those (Soma-libations) which (have been poured out) among the *five tribes*."

ix, 92, 3. "May he (Soma) delight in all the hymns. The wise god seeks (?) the *five tribes*."

x, 45, 6. "He (Agni), travelling afar, clove even the strong mountain, when the *five tribes worshipped Agni*."

In the following texts the five tribes are denoted by *pañcha charshanayaḥ*:—

v, 86, 2. "We invoke Indra and Agni who (dwell) among the *five tribes*."

vii, 15, 2. "The wise and youthful master of the house (Agni) who hath taken up his abode among the *five tribes* in every house."

ix, 101, 9. "Who (Indra) is (salutary?) to the *five tribes*."

The expression *pancha bhūma* is used in the next quotation:—

vii, 69, 2. "Extending over the *five tribes*, let your three-seated and yoked car, O Aświns, wherewith ye visit the worshipping peoples, approach through our prayer," &c.

The word *bhūma* occurs also in ii, 4, 27.

In vi, 61, 12, Saraswatī is spoken of as "augmenting or prospering the *five tribes*," here expressed by *pancha jātā*.

In viii, 52, 7, it is said: "When shouts were uttered to Indra by the people of the *five tribes*" (*pancha-janyayā viśā*), &c.

In R. V., i, 117, 3, Atri is styled *ṛishim pāñchajanyam*, "a rishi belonging to the *five tribes*. In v, 32, 11, the epithet *satpatiḥ pāñchajanyaḥ* is applied to Indra. And in ix, 66, 20, Agni is called the purified rishi, the priest of the *five races* (*pāñchajanyaḥ purohitaḥ*).[1]

[1] See Mahābhārata, iii, 14160, as referred to by Roth under *jana*, where the birth of a being of five colours, apparently a form of Agni, is described, who was generated by five rishis, and who was known as the god of the five tribes (*pāñchajanya*) and the producer of five races.

In some cases the *panchajanāḥ* seem to be gods, as in the following verses:—

x, 53, 4, 5. "Ye five tribes, who eat food, and are worthy of adoration, favour-

Now it is true that in many of the preceding texts, viz., in ii, 2, 10; iii, 53, 16; iv, 38, 10; vi, 46, 7; x, 119, 6; i, 7, 9; i, 176, 3; v, 35, 2; vii, 75, 4; vii, 79, 1; viii, 9, 2; i, 89, 10; iii, 37, 9 (pp. 421, 422), there is nothing to show that the five tribes must be identified with the Aryyas; though, on the other hand, it does not appear to me that there is anything to forbid this identification. But in many of the passages which follow these (p. 423), the five tribes are spoken of as worshipping some of the Aryyan gods, or the latter are said to have taken up their abode among the five tribes, or to be their patrons.

In regard to these *panchajanāḥ* Yāska, however, remarks as follows:—Niruktu, iii, 8, "Some say the word denotes the (five classes of beings called) Gandharvas, Pitṛis, Devas, Asuras, and Raxases. Aupamanyava says it designates the four castes, with the Nishādas for a fifth class." This explanation of the word can scarcely be correct as regards its ordinary application to men; as we have just seen that the five tribes or classes of men were all such as were admitted to join in the worship of Agni and the other gods, and therefore could not have included the Nishādas, who were outcasts.

On the same subject, Prof. Roth remarks as follows in his dictionary under the word *kṛishṭi*:—"The *five races* is a designation of *all nations*, not merely of the Aryyan tribes. It is an ancient enumeration, of the origin of which we find no express explanation in the Vedic texts. We may compare the fact that the cosmical spaces or points of the compass are frequently enumerated as *five* (especially in the following text of the A.V., 3, 24, 2:—'these five regions; the five tribes sprung from Manu'); among which we should have here to reckon as the fifth region the one lying in the middle (*dhruvā dik*, A.V., 4, 14, 8; 18, 3, 34), that is, to regard the Aryyas as the central point, and round about them the nations of the four regions of the world..... According to the Vedic usage, five cannot be regarded as designating an indefinite number."

In the Veda a strong line is drawn between the sacrificers

ably receive my oblation." See Nirukta, iii, 8, and Roth's illustrations, p. 28. See also x, 55, 2, 3, where the phrases *priyāh pancha*, and *pancha devāh* occur.

x, 60, 4. "In whose worship Ikshvāku prospers, wealthy and victorious, like the *five tribes* in the sky (*divīva pancha kṛishṭayah*).

In iii, 20, 4, mention is made of the "divine peoples" (*kshitīnām daivīnam;*) and in vi, 16, 9 (see above, p. 411), the words *divo visah*, "people of the sky," occur.

In Atharva veda, xi, 2, 9, there is a fivefold divison of animals:—"Thy (Rudra Paśupati's) five sorts of animals are thus divided, kine, horses, men (*purushāh*), goats, and sheep."

(*yajamāna*, *devayu*, &c), and the non-sacrificers (*avrata*, *apavrata*, *anya-vrata*, *adevayu*, &c). Now, the descendants of Manu appear, as we have seen, to be generally identified with the Āryyas, and with the worshippers of Agni, Indra, &c.; and the five tribes again seem, very frequently at least, to represent the very same classes of persons, and to be described as adherents of the same divinities. It is therefore difficult to perceive the propriety of Roth's conclusion, that the words *pancha janāḥ*, *pancha krishtayaḥ*, &c., as commonly employed in the hymns of the Rigveda, are mere general designations for the whole of mankind. Unless these *five tribes* are identified with the Aryyas, it is not easy to see what portion of the inhabitants of India at least they can be held to designate, as those inhabitants appear so distinctly to be divided into worshippers and enemies of the gods, and it is scarcely conceivable that persons not of Aryyan extraction, or, at least persons who were not incorporated with the Aryyan tribes, should have been recognised as members of the same religious community, and sharers in the same institutions. Roth, indeed, speaks, in the extract I have made from his lexicon, of a portion of the *pancha krishṭayah* as foreign nations living around the Aryyas; but as we have seen, many of the passages I have quoted above seem to regard them as forming part of the Indian people. It may be, however, that the term is sometimes used in a stricter sense of the Aryyan tribes, and at other times extended to mankind in general.

The expression *pancha-mānavāh* occurs also in the Satapatha Brāhmana, 13, 5, 4, 14, in an old verse celebrating a sacrifice of King Bharata.[1] "Neither former nor later men of the five tribes sprung from Manu have equalled this great ceremony of Bharata, just as no mortal has reached the sky with his arms." With the phrase *pancha-mānavāḥ* here employed, Weber (Indische Studien, i, 202) compares the expression *pancha-janāḥ*, which, as he there states, has been referred by Kuhn (in the Hall. Allg. Lit. Z., 1846, p. 1086) to the five tribes pointed out by Roth (Lit. and Hist. of the Veda, p. 131 f.) as existing in the Panjab. These five tribes, the Anus, Druhyus, Pūrus, Turvasas, and Yadus, are mentioned in several parts of the Rigveda. Of these names the Anus are explained by Roth in his dictionary (under the word) as, "according to the Nighantu, 2, 3, denoting men in general, but as being in the Veda limited to the designation of remote peoples, strangers to the Aryyans, and as only apparently (not really) signifying a particular race, when it is joined with other appellatives, such as

[1] See above, p. 414, note.

Turvasa, Druhyu, &c., to distinguish more clearly the varieties of nations and places." In a later part of his work, however, Roth speaks of Turvasa as being "the name of an Aryyan tribal hero or patriarch, and of the tribe itself, which is frequently mentioned in the Rigveda, and appears to be nearly related to the family of Kaṇva, and is commonly connected with Yadu."

It seems, however, difficult to dissociate the Anus from the Turvasas, and to suppose the one to have been Aryyan and the other non-Aryyan. The five tribes in question appear to be closely connected in the following verse:—

i, 108, 8. "If, O Indra and Agni, ye are among the Yadus, Turvasas, Druhyus, Anus, Pūrus, come hither, vigorous heroes, from all quarters, and drink the soma which is poured forth."

There is another word employed in the Rigveda to designate some portion of mankind, viz., *nahush*. We have already met with this term in a verse (x, 80, 6) quoted above, p. 409, where it is closely connected with Manush, and the adjective derived from it occurs in vi, 46, 7 (p. 422), where the tribes of Nahush rather appear to be distinguished from the five tribes, whom we may suppose to be those of Manush. This word Nahush, or its derivative, *Nāhusha*, is also to be found in the following texts:—i, 31, 11; v, 12, 6; vi, 22, 10; vi, 26, 7; vii, 6, 5; ii, 95, 2; viii, 8, 3; viii, 46, 27; ix, 101; x, 49, 8; x, 80, 6; x, 99, 7.

Roth (s. v.) regards the people designated by the word *nahush* as denoting men generally, but with the special sense of stranger, or neighbour, in opposition to members of the speaker's own community; and he explains the words of x, 80, 6, referred to above (p. 409), as signifying "the sons of our own people, and of those who surround us."

If, however, the descendants of Manush in that passage are understood as embracing all the Aryyas, and the descendants of Nahush are separate from the latter, it would follow that Agni was worshipped by tribes distinct from the Aryyas. The descendants of Nahush, are, in fact, distinctly spoken of in x, 80, 6 (the passage just referred to), as worshippers of Agni; in i, 31, 11, it is said, "The gods made thee, O Agni, the first man (*āyu*) to man (*āyu*), and the prince (*viśpati*) of *Nahusha*; they made Iḷā the instructress of Manusha; and in vii, 95, 2, Sarasvatī is described as milking forth butter and milk for the descendant of Nahush.

The descendants of Nahush can scarcely, therefore, have been regarded by the Aryyas as aliens from their race and worship.

Waiving the question above raised, whether or not any races

distinct from the Aryyas were included among the descendants of Manu, there is no doubt that he was regarded as the progenitor of the Aryyas at least. But it is not merely in the hymns of the Veda that we find proof of his being originally so regarded. In the Satapatha Brahmana also, and in the Mahābhārata, there is evidence to the same effect in the legend of the Deluge, which occurs in both these works. As this legend is given at length in several publications,[1] I need not introduce it here at length, but will merely abstract its most important points. According to the story in the Brāhmana, a fish came to Manu,[2] and asked to be preserved by being placed, first in a jar, and then successively in a trench and in the ocean, as it grew larger and larger. In return it promised him deliverance from a flood which was to come upon the earth, and sweep away all living creatures. Manu did as he was desired, and when the flood came he embarked in a ship which he had constructed, and fastened the cable to the horn of the fish which swam near him. He was thus conducted over the northern mountain, from which he descended as the waters abated. Now "the flood," as the legend goes on to say, "had carried away all these creatures, and Manu alone was left here. Being desirous of offspring," he performed a religious rite, and in a year a female was born, who called herself Manu's daughter. In her company he renewed his religious observances, and "begot with her this race which is called the offspring of Manu." This testimony to Manu being regarded as the progenitor of the Aryyan Indians is sufficiently clear.

In the same way it is related in the Mahābhārata (Vana-parva, vv. 12746—12802) that when Manu Vaivaswata was performing austerity, a fish came and claimed his protection; and was, in consequence, placed by him in a jar, in a pond, in the river Ganges, and in the sea successively, as it grew larger and larger. When thrown into the sea, the fish announced to Manu the approaching deluge, and desired him to have a ship constructed in which he should embark, taking with him the seven rishis, and all the seeds as formerly described by Brahmans, separately preserved. Manu did as he was enjoined; taking all the seeds he embarked in the ship, and meditated on the fish, which arrived, and after the ship's

[1] Weber's Indische Studien, i, 163 ff; Müller's History of Ancient Sanskrit Literature, pp 425 ff; my Sanskrit Texts, ii, 325 ff.

[2] In this passage Manu receives no title. In Book xiii, 4, 3, 3, of the same Brahmana, however, a King Manu Vaivaswata is spoken of, of whom men are the subjects.

cable had been attached to its horn, it drew the vessel for many years over the ocean, and brought it to the highest peak of the Himālaya. The rishis there fastened the ship according to the command of the fish, who then revealed himself to them as Brahmā Prajāpati; and enjoined that "all beings, gods, asuras, men, and all worlds, including things moveable and immoveable, should be created by Manu." Manu accordingly, after performing rigorous austerity, began to create all beings.

Though Manu is here represented not as the progenitor of men, but as the creator of all beings, the legend even in this form corroborates the supposition that he was originally regarded as the ancestor of the Aryyan Indians. The story, as contained in the Mahābhārata, includes some details which do not occur in the version given in the Satapatha Brahmana, and which brings the account into closer accordance with the Semitic form of the legend, as preserved in the book of Genesis. These details are: 1st. That Manu was accompanied by the seven rishis, who made up with himself eight persons,—the same number as Noah, with his wife, and his three sons and their three wives. 2nd. That Manu took with him all the seeds, just as Noah is said to have taken pairs of different animals with him into the ark. In another respect, viz., in describing Manu as having offered sacrifice immediately after his deliverance from the deluge, the Brāhmana coincides more nearly than the Mahābhārata with Genesis viii, 20; where Noah is also represented as having offered burnt offerings. The only feature of the story in the Mahābhārata, which answers at all to the sacrifice, is the austerity which Manu is said to have performed before he began to create.

Although the particulars to which I have alluded (regarding the seven rishis and the seeds) are omitted in the Satapatha Brāhmana, it does not necessarily follow that these details were invented by the author of the account given in the Mahābhārata. It is, no doubt, true, that in most instances the transformations which we find the older legends to have undergone in the Māhabhārata and Purānas, are entirely due to the imagination of the later writers; but this need not have been always the case; and it is, therefore, quite possible that the particulars to which I refer may have been borrowed by the writer in the Mahābhārata from some other more ancient work now no longer extant.[1] It is noticeable that no

[1] I find that the same idea has occurred independently to M. Pictet, whose observations on this subject (Origines Indo-Européennes, ii, 616) I had not read when the remarks in the text were written.

subsequent mention is made in the sequel of the story of Manu having made any use of the seeds which he took with him for the purpose of aiding him in the restoration of the world which had been destroyed by the deluge.[1]

But was it the Aryyan Indians only who looked upon Manu, or Manush, as the progenitor of their race, or was this belief shared by the other branches of the Indo-Germanic race? On this subject Professor Roth observes (Journal of the German Oriental Society, vol. iv, p. 430):—"But Manu, 'the intelligent,' or 'the man' absolutely, is the prototype of men endowed with reason. In the Veda he is frequently called 'father Manu,' but without the more particular features of a mythical personification, for he is without lineage, attributes, &c. He represents the intelligent man, who understands how to order himself upon earth, and especially how to place himself in the proper relation to the gods; he kindles the fire of the altar; knows how to obtain celestial means of healing; and is able to bequeath benefits of this description to his descendants. The absence of the word in Zend, not merely as a proper name, but also as a designation of man, leads us to conclude that Manu is not a creation common to both the Aryyan races (*i. e.*, the Persians and the Indians) in this primeval period, but a more recent Indian creation."

In his Indische Studien, however (see vol. i, 194 ff.), Prof. Weber expresses a different opinion. After referring to Burnouf's discussion (in the preface to the third volume of his Bhâgavata Pur.) of the sense of the word Manu in the Rigveda, he goes on to remark that that author "goes too far when he asserts that Manu had not then yet become a proper name, since comparative mythology will scarcely consent to separate King Manu from King Minos (not to adduce anything further); the representation which lies at the foundation of both personages must rather have been formed before the separation of the Indo-Germanic races."[2]

[1] In a note to a passage which I have quoted above, p. 407, from the Rigveda, ii, 33, 13, where Manu is said to have "chosen certain remedies," Prof. Wilson remarks: "This alludes, no doubt, to the vegetable seeds which Manu, according to the Mahābhārata, was directed to take with him into the vessel in which he was preserved at the time of the deluge; the allusion is the more worthy of notice, that this particular incident is not mentioned in the narrative that is given of the event in the Śatapatha Brahmana." See also the introduction to the same volume, p. x. The commentator, however, is silent as to any reference being made in this passage to the seeds taken by Manu into the ship; which, besides, are said to have been "all the seeds, as declared before by the Brahmans."

[2] Weber goes on (p. 195) to quote two texts of the White Yajur-veda, where

In the same passage Weber refers to various other texts relating to Manu, and among others to the following:—

S. P. Br., i, 1, 4, 14 ff. (p. 9 of Weber's ed.) "Manu had a bull, in which resided a voice which destroyed Asuras and enemies. From its snorting and roaring the Asuras and Rāxasas were being destroyed. The Asuras said, 'This bull, alas! is doing us evil; how can we destroy it?' Kilāta and Ākuli were the priests of the Asuras. They said, 'Manu is full of faith (*śraddhā-devaḥ= śraddhaiva devo yasya sa śraddhā-devaḥ śraddhāluḥ. Comm.);* let us know (try) him.' They came and said, 'Manu, let us sacrifice for thee.' 'With what offering?' asked Manu. 'With this bull,' they answered. He answered, 'So be it.' The voice issued forth from the bull when it was sacrificed, and entered into Manāvī, Manu's own wife. Wherever they heard her speaking, the Asuras and Rāxasas were destroyed. The Asuras said, 'It brings us now still greater evil, for the human voice speaks more.' Kilāta and Ākuli said, 'Manu is full of faith, let us know (try) him.' They came and said, 'Manu, let us sacrifice for thee.' 'With what offering?' inquired Manu. 'With this, thy wife,' they replied. 'So be it,' he answered. The voice issued forth from her when sacrificed, and entered into the sacrifice and sacrificial vessels. The two Asura priests could not drive it (the voice) out thence; it is it which sounds, destroying Asuras," &c.[1]

It has been remarked by various authors (as Kuhn, Zeitschrift, iv, 94 f.), that in analogy with Manu, or Manush, as the father of mankind, or of the Aryyas, German mythology recognises Mannus as the ancestor of the Teutons. Tacitus says, Germania, 2. Celebrant carminibus antiquis Tuisconem deum terrâ editum, et filium *Mannum*, originem gentis conditoresque. Manno tres filios adsignant, &c.

The English "man," and the German "Mann," appear also to be akin to the word *manu*, and the German "Mensch" presents a close resemblance to *manush*.

he considers that Manu must be treated as a proper name, viz., xi, 66, "Hail to the Prajāpati Manu;" and 37, 12, "Thou art Manu's mare;" on which last text the Śatapatha Brahmana adduces a myth in the following words, "This (earth) became a mare, and carried Manu."

[1] Translated by Weber in the Journal of the German Or. Society, vol. 4, p. 302, who remarks in a note that this bull of Manu is compared by Dr. Kuhn to the Greek Minotaur; but that though the resemblance is at first sight manifest, considerable difficulties arise when the two stories are compared more in detail. See Kuhn's Zeitschrift für Vergl. Sprachf., iv, 91 ff.

Art. XIX.—*On a Neo-Syriac Language, still spoken in the Anti-Lebanon.* By The Rev. Jules Ferrette, Missionary at Damascus.

[*Read 4th May*, 1863.]

In the spring of 1861 I passed through the town of Ma'lula, on my way from Ba'labakk (Baalbek) to Damascus. Ma'lula is one of the most curious towns not only in Syria, but in the world. It hangs in an apparently unsafe manner on the side of a perpendicular rock of very great height. The houses are partly excavated from the rock, and partly built upon one another. The streets are so steep that men have to walk on all fours and mules on two legs. The dogs, which in other eastern cities manage their affairs among themselves without belonging to any master, or seeming to notice any passer by, are here of an exceptional temper. They bark at travellers, and especially at the skirts of European coats, in a most threatening manner, so that one has to look after his legs, beside trying to keep his equilibrium. Ma'lula is full of antiquities, the study of which would abundantly repay the sojourn of an antiquarian for a whole summer. They consist chiefly of innumerable caves and tombs cut in the rock, wondrous carved figures of priests and kings, &c. The top of the mountain is a plateau, fertilized by a very large stream, the waters of which, divided into two mighty torrents, encircle the town, and loose themselves in a thousand rivulets under the walnut, mulberry, and pomegranate trees of the oasis below. On one side of the village is the famous convent of St. Thecla, inhabited by *bons-vivants*, monks of the Greek orthodox denomination, whose only business is to work miraculous healings of sick pilgrims, and to supply with cordial hospitality, and streams of the generous wine of the locality, any traveller who may repair to them, whatever his creed. Contrary to my custom, I was not their guest this time, but pitched my tent at the foot of the monastery, under a large tree near the mill. As soon as the news of my arrival was spread, the whole town came down to look at the traveller. Men and women, boys and girls, priests and monks, all sat around, to the unspeakable annoyance of my servants and soldiers, but to my great satisfaction, for I was glad to talk of the Gospel with these simple mountaineers. I had also

long been looking for an opportunity of having some idea of the Syriac dialect still spoken in Ma'lula and in two neighbouring villages, while it has disappeared, as a vernacular language, from the rest of Syria. I, therefore, took a pencil, sat on my carpet in the door of my tent, and without other formality proceeded to make a little Syriac vocabulary by naming divers objects in Arabic which they all know, requesting them to translate each word into their own dialect, and writing the answer on the red cover of an Arabic catechism, of which I had already distributed some scores of copies among them. I give this glossary in its unpretending form, as I was able to get it from those villagers, with whom I had only one night to spend.

ܫܢܐ	ܨܒܝܐ	ܟܕܐ	ܫܥܐ	ܟܦܐ	ܫܟܐ	ܐܝܡܐ	ܟܘܟܐ
sultan	flower	staff	belly	herb	king	tunic	head
ܟܘܟܐ	ܡܕܒܚܐ	ܣܘܣܝܐ	ܐܝܪܐ	ܟܢܫܐ	ܫܘܪܐ	ܫܥܪܐ	ܒܬܐ
road	ass	barley	church	hand	horse	teacher	town
ܡܪܨܐ	ܫܡܐ	ܚܣܐ	ܫܥܐ	ܠܘܚܐ	ܬܘܪܐ	ܫܡܐ	ܡܕܒܚܐ
apricot	river	war	roof	ox	eye	heaven	altar
ܫܡܫܐ	ܠܠܝܐ	ܝܡܐ	ܝܒܫܐ	ܚܩܠܐ	ܢܘܗܪܐ	ܨܦܪܐ	ܣܝܦܐ
morning	evening	day	night	field	water	light	sword

In the above words the pronunciation of Ma'lula is simply Syriac, but has a striking peculiarity. It is known that in Hebrew the long ָ is pronounced *a* by the Spanish and Italian Jews, as well as by the translators of the Septuagint and the Vulgate, whereas the Polish and German Jews pronounce it *o*. The vowel ◌ܳ, the Syriac correspondent of the Hebrew long ָ, is pronounced *a* by the Nestorians, and *o* by the Jacobites and Maronites. In Ma'lula both pronunciations are used by the same person in different words, and by different persons in the same word. No sooner was a word given to me in the one pronunciation, than some other person present pronounced it in the other manner, except in a few words in which all seemed to be agreed.

In the following words some of the Syriac letters are pronounced by the Ma'lulans in such a peculiar and unexpected manner, that I have thought it necessary to exhibit the pronunciation by means of the Arabic alphabet, supplemented by the two Persian letters پ and چ.

ܣܥܬܐ	ܚܦܝܐ	ܟܦܬܐ	ܓܘܙܐ	ܪܓܠܐ	ܡܬܪܣܬܐ	ܕܪܥܐ	ܚܛܝܐ
سِعْثا	خيفا	ذقنا	غوزا	رِغلا	مَترَستا	ذراعا	حَطّايا
finger	stone	beard	walnut	foot	school	arm	wheat

ܟܠܒܐ	ܦܬܚܐ	ܒܝܬܐ	ܟܬܒܐ	ܡܕܝܢܬܐ	ܡܟܣܢܐ	ܦܡܐ	ܬܪܥܐ
خَلپا	بَغلا	پيثا	ختابا	مَدينچا	مَنخرا	ثَمّا	ثَرعا
dog	mule	house	book	city	nose	mouth	door

ܩܪܒܐ	ܐܝܠܢܐ	ܫܢܐ	ܒܝܬܐ	ܓܕܝܐ	ܠܫܢܐ	ܣܡܐ	ܚܪܦܐ
قتّر	شَجَرتا	شِنّا	دارچا	عِزّا	لِشّانا	خرافا	خائلا
battle	tree	tooth	house	goat	tongue	sheep	wall

I then requested them to translate for me the Lord's prayer into Ma'lulan Syriac; but a universal outcry was raised from every side as to the exorbitant nature of my demand. Some of the priests affirmed, *ex cathedrâ*, that not only had the Lord's prayer never been uttered in modern Syriac, but that to translate it would be a mere impossibility. All the competent scholars of the town gave peremptorily their assent to this declaration, but I was not so easily satisfied. They had therefore to submit, and I obtained, not without trouble, the following result, with which I also give the figured pronunciation and an interlineary version:—

ܐܒܘܢ ܕܒܫܡܝܐ . ܢܬܩܕܫ ܫܡܟ . ܬܐܬܐ ܠܟ ܡܠܟܘܬܟ .

أَبونَ بشما . يِجقَّيش اشمَخ . تاثا لا مَلكيوثَخ .

. tuum-regnum sibi veniat. tuum-nomen sanctificetur, cœlo-in noster-Pater

ܐܝܟ ܕܒܫܡܝܐ ܐܦ ܒܐܪܥܐ ܢܗܘܐ ܨܒܝܢܟ ܥܡ ܒܪܝܬܐ .

جِيبِه مسيثخ اِخمذا بِشما أَو برعا .

. terra-in aut cœlo-in sicut tua-voluntas ea-cum Veni

ܐܒ ܠܚܡܐ ܕܣܢܝܩܢ ܝܘܡܢ () ܘܫܒܘܩ ܠܢ .

أَب لَخ لَحما اَخّل يوما بِيوم () ا .

. die-in () die omni panem nobis da

أحض كس سهدس أحضى حضنى أنس كض نعا.

اغفر لَح حطّيثَح اخمن غافرين أنَح لابن نيشا.

. onis filio nos dimittentes sicut nostrum-peccatum nobis dimitte

لا ؤبسكنس صهزحضا. نهنس مخلا هزنا. أحضى.

لا تتخلنَح بچغربياثا. نَچنّ مخل شريرا. أيمين.

. Amen. malo omni-ab nos libera. tentationes-in nos-inducas ne

I regret that this translation is not more adequate, but it is all I could get. My principal object was not so much to have a perfect Neo-Syriac version from the original Greek, as to have an intelligible and authentic specimen of the Ma'lulan dialect. When I saw it impossible for me to get from them what I wished, I feared, if I insisted more, that I should get some apocryphal words forged for the purpose of pleasing me. I, therefore, took what they gave, and brought the effort to a close.

This translation of the Lord's prayer exhibits leading features of the declension, the conjugation, and the use of affixes. But how great would have been my pleasure had I been able to get the whole conjugation of one verb or two. In this attempt I was very imperfectly successful. Notwithstanding all my entreaties here is the preterite, which was forced upon me, and which in some persons looks like that Syriac present which is formed of the participle and pronoun.

Singular.	3	أحضا	هو اِقتَل	Ipse occidit . .
	2	صهدحا	هَچ قتلِچ .	Tu occidisti . .
	1	أنا صهدحا	انا قتلَت .	Ego occidi . .
Plural.	3	صهزا	هُن قتّل .	Ipsi occiderunt .
	2	صهدحى لا	هَچُن قاتلين چن	Vos occidistis
	1	أنس صهدحى نس	أنَح قاتلين نَح .	Nos occidimus

The conjugation of the verb ܟܬܒ is interesting on account of the wonderful changes of pronunciation in the letters ܟ ܒ ܒ.

PRETERITE.

Ipse scripsit . .	هو اِختَب	ܐܟܬܒ ܗ	3	SINGULAR.
Tu scripsisti . .	اچ خَتَبچ	ܐܢ ܟܬܒܬ	2	
Ego scripsi . .	اَنا خَتَبِچي	ܐܢܐ ܟܬܒܬ	1	
Ipsi scripserunt .	هِن اِختَب	ܐܟܬܒ ܗܢ	3	PLURAL.
Vos, scribentes-vos	اَچخُن خاتبي چخون	ܐܢܬܘܢ ܟܬܒܬܘܢ	2	
Nos, scribentes-nos	اَنَخ خاتبين نَخ	ܐܢܚܢ ܟܬܒܢ	1	

IMPERATIVE.

ܐܟܬܒ اُختُب

ACTIVE PARTICIPLE.

Scribens .	كاچبا ܟܳܬܶܒ	*m.*	SING.
Scribens .	كاچبثا ܟܳܬܒܳܐ	*f.*	
Scribentes	كَچثيبين ܟܬܝܒܝܢ	*m.*	PLUR.
Scribentes	كاچبياثا ܟܳܬܒܝܳܐ	*f.*	

PASSIVE PARTICIPLE.

Scriptus . خثيبا ܟܬܺܝܒ

When I asked for the future, I was told that there existed none, and that the preterite was used instead of it. This is a manifest contradiction to what we see in the Lord's prayer, where futures are used, and that not only in verbs of almost Arabic forms, but also in a perfectly Syriac verb as ܢܨܒ.

The imperative, as far as I was able to ascertain, undergoes no alteration in the feminine or plural.

The passive participle is ܚܛܝܠܐ, pronounced ختيبا. It is strange that the form which should, according to analogy, have been that of the masculine plural of the passive participle should have been given to me by the natives as that of the active participle of the same gender and number.

I could get no participles from ܩܛܠ, but was told that ܩܛܠܐ means a murder, and قتر a battle.

I have given all that I was able to gather in a few hours sojourn. Incomplete as information so hastily gathered must necessarily be, I thought it was not to be neglected. In the defect of other information it will be better than nothing; but I rather hope that it may excite others, if not myself, to make a fuller study of an interesting dialect, which, pressed as it is on every side by the Arabic, is likely very soon to disappear.

It is very remarkable that the only three villages of Syria in which the Syriac is still vernacular, though in a corrupt form, do not belong to the Syriac Church. Some are Muhammedans, and some Christians of either the Greek Orthodox or Greek Catholic denominations, both of which have their liturgies in Arabic.

Art. XX.—*On the Bodily Proportions of Buddhist Idols in Tibet.* By Emil Schlagintweit, LL.D.

[*Read 15th June*, 1863.]

We learn from the ancient legends, that in the very earliest periods of Buddhism relics and images of Buddha were highly honoured. The religious works recommend their worship, as also that of the monuments in which the relics are deposited; and we find it mentioned that the images sent to royal personages at their desire were previously inscribed with the sacred dogma, "Ye Dharma," &c., and similar formulas, in order to make those personages acquainted with the Bhuddist doctrines.[1] Such were the first objects of worship. In the seventh century A.D., however, this adoration and worship had already been considerably increased; for Thien Thsang, the Chinese pilgrim, mentions, that all the principal disciples of Sákyamuni were then addressed, as also the Bódhisattwas who had excelled in virtue and the sciences, as Manjusrí. "The Maháyána schools," he says, "have adored even all Bódhisattwas without any further distinction."

Modern Buddhism goes much further still. Besides the things and persons just mentioned, it worships the mythological Buddhas and Bódhisattwas preceding Sákyamuni, as well as those who will follow him; also a host of gods, spirits, and deified priests enjoying a local reputation for sanctity. It has further made, in order to facilitate the adoration of its many deities, representations of them in prodigious quantities. Copies are met with everywhere; not a temple but contains numbers of them; and they are also set up in private houses and in the open air.

An analysis of the bodily proportions of these representations, showing well-defined features belonging to two groups decidedly differing from each other, will be the object of the following pages. The difference between the plastic forms of the Buddhas and Bódhisattwas on the one hand, and those of Dragsheds, Genii, and Lamas on the other, has not yet been, as far as I know, examined by measurements, though in Tibet the forms are more worthy our attention, from the fact that the country is inhabited by a race of

[1] Burnouf, "Introduction," pp. 337–51. Sykes, "Miniature Chaityas and Inscriptions of the Buddhist religious dogma." Jour. R. As. Soc., vol. xvi, p. 37.

men widely differing in form and customs from the Indian races, among whom the Buddhist faith originated.[1]

My brothers had made it a particular object of their ethnographical researches, to take facial casts, moulded by a mechanical process from the living subjects;[2] and also to define, by minute measurements of the different parts of the head and body, the general bodily proportions of the various tribes. They were also allowed to take measurements of the statues of the Buddhas and of other pieces of sculpture representing divinities set up in the temples. These materials have proved a very welcome fund to me, as they have, taken together with analyses of images and the examination of the Buddhistical speculations respecting the external appearance of their royal founder, given me the opportunity of entering into a discussion of the ethnological characteristics of the various classes of deities represented.[3]

The artistic representations in human form of divinities, and the figures of heroes, we find to be, in every nation, the reproduction of its own peculiar type of features, unless history somewhat modifies this otherwise natural course. Instances of this latter case are, however, much less frequent than we might anticipate. The principal causes why history has not a greater influence on the adoption and employment by art of foreign types are, it may be supposed, the following:—Firstly, the employment of images of a foreign type can be but temporary; for, the peculiar bodily proportions of a people being constantly before the eyes of these artists, they are soon taken as the leading models. And secondly, the bodily proportions have shown but little variety for periods of unexpected length. Did not the type of a nation remain, indeed, comparatively unchanged during a long period of time, the retention or not of foreign elements in art could not be judged of at all. As a

[1] I here limit myself to an analysis of the human forms, referring, for varieties in attitude, dress, and emblems, to chapter xiv of my volume on Buddhism, entitled, "Buddhism in Tibet, illustrated by Literary Documents and Objects of Worship."

[2] The entire series of 275 facial casts (published in a metallic edition by F. A. Barth, Leipzig, and Trübner, London) are to be seen in the India Museum, London, and in various other Museums. In this reproduction four principal shadings are distinguished, corresponding to the variations of complexion.

[3] The ethnographical materials collected by my brothers during their travels will be the object of vol. viii of the "Results of a Scientific Mission to India and High Asia." Such of the numeric values as were wanted here for comparing the measurements of the sculptures with the mean proportions of the Brahmans (the purest caste of the Hindus), and of individuals of the Tibetan race, have been calculated for the purpose at once.

peculiarly striking instance of the constancy of national type, I mention the results obtained from the inspection and comparison of works of Egyptian sculpture.[1] They show, although somewhat disguised under the monumental form, the features of the present inhabitants of those regions, as well as of the various neighbouring nations with whom their ancestors had come in contact.

A tendency to adopt in religious images the figure peculiar to the artist's own nation, is observed wherever foreign images have been introduced together with foreign worship. The images display the characteristics of the nation now executing them; the proportions of the body and the features may become somewhat idealized.[2] Garments, however, ornaments, arms, and the like, remain recognizable as of foreign origin.

But it is a peculiarity of the religious representations of Tibetan Buddhism, that they display two well-defined co-existing types, the one showing the Tibetan features, the other having retained the marks of Indian origin. To an eye practised in the examination of minor features in ethnography, the respective geographical origins of the two prototypes present themselves distinctly enough; and even intelligent natives, on their attention being directed to the leading characteristics, soon learn how to distinguish the types. Nevertheless, great precaution is necessary in touching on so delicate a consideration. Questions of ideal modifications have to be discussed and settled here, as in nearly every analysis of artistic

[1] As the principal works which treat of these interesting and delicate questions, I quote "Types of Mankind," and "Indigenous Races," by Nott and Gliddon. As another phenomenon in corroboration of the comparative invariability of the original type, may be quoted the Jewish colonies in India, whose members have preserved the Semitic features, and even the fair complexion, wherever they have abstained from intermarriages with natives; but have become assimilated in form to the natives where intermixture with them has taken place.

[2] As a curious and till now isolated instance of an apparent deviation in sculpture from the *natural proportions*, I may here mention that my brother Hermann observed in the Niniveh sculptures that the foot was considerably longer than the ulna; whilst arbitrary deviations in this respect from nature in sculpture most generally show the opposite error. It must be added, however, that as yet it appears impossible to decide whether this deviation is based upon a real anatomical feature or not, as no human remains from these countries, nor portraits of the Ninivites by other nations which would corroborate it, are to be seen even in the rich oriental museums of London. Perhaps the continued researches and important discoveries in these regions made by Sir Henry Rawlinson, to whom my brother had occasion to communicate his remark, will one day assist in deciding the question. Foreign nations figured as prisoners by the artists of Niniveh have not these exceptional proportions; this decidedly increases their importance wherever we meet with them.

works, before one enters upon a comparison of positive data. And this, probably, has been the obstacle to the explanation of forms at first sight appearing altogether unusual, as well as arbitrary.[1]

The Bhot race, belonging to the Turanian family, has been so often described in detail that I shall confine myself, in my remarks on this people, to what is absolutely necessary. The Bhots are characterised by broad features, prominent cheekbones, and oblique eyelids, the orbits and eyeballs, however, being unaffected thereby. I may add as other features less striking, perhaps, but not less typical, that in the Bhot race the ear is comparatively longer, the mouth broader, and the lower jaw, with the chin, decidedly weaker. Now in all the representations of the Buddhas and Bódhisattwas, we meet, on the contrary, with features reminding us of the type of the Indian races of Aryan origin—the high and open forehead, with a broad, symmetrical, and prominent chin. My analytical remarks in reference to the measurements given will also prove that the body, too, of the Buddhas presents many other not accidental analogies with the bodily proportions of the Aryan family of mankind. Dragsheds, Genii, and Lamas, on the contrary, show the Tibetan character.

Before entering into details, I wish to say a few words on the numbers laid down in the following tables. In order to facilitate an immediate comparison, these numbers are made to represent only *proportional values*. The absolute dimensions were referred, by division by the total height, to that total height here taken as unit; and they can be re-obtained at once by multiplying the respective numbers by the total height, which before was used as a divisor. Its mean value for the Brahmans measured is 5 feet 6 inches (English); for the Bhots, 5 feet 4 inches. For the statues the absolute values are of much less importance. It is here particularly necessary to keep in view that objects of coarse workmanship and of very small dimensions were avoided, as such things could not be considered as presenting a fair average. As an approximate mean value of absolute height I may name 3 to 4 feet for Group C, and 2 to 3 feet for Group D. Group C includes, besides, two statues from Burmah, exceeding 10 feet in height,[2]

[1] I limit myself here almost exclusively to Tibetan Buddhism. China, Japan, and Ceylon, as also the Indian Archipelago, have gods of their own; and these latter show, as was to be expected, types differing from those of the Tibetan representations.

[2] Sculptured figures of Buddha of enormous dimensions are not rare either in Burmah or Tibet. An album of ninety-six photographs by Colonel Trype, of

which were presented to my brother Hermann by Dr. Mouat, who obtained them when accompanying the army in the expedition against Rangoon. The measurements of these two statues were only taken into calculation because a careful comparison with figures of Buddha measured in Tibet have proved them to have almost identical proportions; and they have, besides, the advantage of furnishing, by their size, definite values.

The first and second columns of the tables contain the means of different measurements of the human figure. The Brahman dimensions are based upon five high-caste individuals of perfectly pure race; the Bhot upon twenty-seven, limited also to persons of pure (Tibetan) type, although they include natives of the tract of country extending from the Eastern Himálaya to Western Tibet. The third column of the tables shows the mean measurements of plastic representations, partly also of pictorial ones, the latter being of Buddhas and Bódhisattwas. The fourth column gives the same for Dragsheds, Genii, and Lamas.

The number of measurements taken from living individuals was limited to such parts of the body as by a varied and most detailed examination had been found to be characteristic.[1] In the present comparison with statues, such parts of the body had to be excluded which cannot be well defined in clothed or draped sculptures.

In reference to the terminology used in the dimensions, a few words of explanation will be sufficient.

By vertex is to be understood the place of junction of the principal cranial bones at the crown of the head, coinciding with the whorl of the hair.

The antero-posterior diameter is the line connecting the central part of the forehead with the line of junction of the head with the nape of the neck.

The distances from the crown of the head to the trochanter,

which the Madras Government ordered several copies for official distribution, contains numerous instances of such figures varying from 20 to 40 feet in height. They are sometimes in a sitting, sometimes in a standing attitude. In Tibet my brothers saw an unusually large figure in the temple at Leh. The statue represents Buddha in meditation (in a sitting attitude), and is a little larger than the temple itself, a part of the head going through a hole in the roof into the open air. The composition of this statue is not less curious than its dimensions; the body and legs are formed by a framework of wood, draped with cloth and paper, while the head, arms, and feet are the only parts moulded in clay.

[1] For the anatomical definition of the parts measured, and for the instruments employed, see Hermann de Schlagintweit's Memoir in Bär and Wagner, "Bericht über die anthropologische Versammlung in Göttingen," 1861.

and from the trochanter to the ground, give together the total height of the man. The trochanter is the prominent part of the thigh-bone near its upper end at the hip-joint.

The total span is the distance from the tip of one middle finger to that of the other, the arms being stretched out to their full length in a horizontal position. In statues the total span had to be obtained by adding the length of hands and arms to the breadth of the torso at the shoulders.

The ulna is one of the two bones of the fore-arm; its ends are marked by the elbow and the prominence of the wrist-joint on the side of the little finger.

It is evident that in comparing relative values, the amount of difference has not the same importance for all the parts measured. For, if the object in itself is already diminutive, a small difference is in such a case of the same value as a much larger one in others.

1. DIMENSIONS OF THE HEAD.

(Total height of the body=1.)

Objects measured.	A. Brahmans.	B. Bhots.	C. Buddhas, Bodhisattwas.	D. Dragsheds, Genii, Lamas.
Periphery round the forehead ..	0·322	0·345	0·350	0·420
From the vertex to the orbital margin ..	0·103	0·111	0·110	0·131
From the vertex to the base of the nose ..	0·126	0·131	0 140	0·150
From the vertex to the mouth	0·133	0·140	0·150	0·152
From the vertex to the chin	0·145	0·149	0·166	0·160
Diameter at the temples	0·078	0·083	0·088	0·100
Diameter, antero-posterior ..	0·105	0·114	0·114	0·130
Eyes, distance of exterior corners..	0·055	0·065	0·071	0·087
„ interior do.	0·021	0·022	0·023	0·030
„ length of the eye	0·017	0·022	0·024	0·029
Malar, or cheek bones, breadth ..	0·064	0·078	0·081	0·090
Nose, breadth	0·022	0·023	0·025	0·029
„ length	0 029	0 033	0·035	0·033
Ear, length..	0·035	0·040	0·110	0·070

The numbers in the table show that *all* the dimensions of the head are greater in both groups of the figures than in the groups of the living beings. The figures have, in general, the head much *too large* in proportion to their height; but the deviations are not the same in each group. The most arbitrary form is that of the ear; thus, by the lobe of the ear being perforated for the reception of ornaments, and its being extended to an unusual length, it sometimes reaches down to the shoulders. The eyes, too, are extremely

large, and have in both groups a decided, though unequally strong, Bhotian type. They show the outer angles raised, the horizontal axis inclined, and a great length. The effect of these dimensions becomes still more striking by the eyes being very often only partly open. The periphery round the forehead, the diameter at the temples, and particularly the antero-posterior diameter, are much less increased in the Buddha figures, Group C, than in those of the Dragsheds and Lamas, Group D. The parts least differing in the different types are the mouth, the cheek bones, and the breadth of the nose between the eyes, as well as at its base. Group D has these latter, however, a little larger.

On examining the general character of the head in the respective groups, we find in Group C the vertical length of the head comparatively greater, and the head itself of a more oval form. Group D has the head horizontally elongated—a form characteristic also of the Bhot race, Group B; in both these the forehead is low, and the jaw-bone weak. The distance from the vertex to the orbital margin, and to the base of the nose, is greater in Group D than in Group C; the distance from the vertex to the chin, on the contrary, is considerably less in Group D; it exceeds the distance to the mouth by 0·016 in Group C, and only by 0·008 in Group D. The pure Brahman type, A, has the respective difference 0·012.

2. DIMENSIONS OF THE BODY.

Objects measured.	A. Brahmans.	B. Bhots.	C. Buddhas, Bodhisattwas.	D. Dragsheds, Genii, Lamas.
Total height	1·000	1·000	1·000	1·000
Crown of the head to trochanter ..	0·446	0·449	0·430	0·410
Trochanter to ground	0·554	0·551	0·570	0·590
Total span of extended arms ..	1·025	1·069	1·080	1·117
Length of arm	0·433	0·451	0·449	0·430
„ ulna	0·165	0·164	0 149	0·155
„ hand	0·107	0·110	0·110	0·111
Foot, length	0·144	0·145	0·140	0·144
„ breadth	0·057	0·058	0·050	0·051

In reference to the dimensions of the body we see, as a peculiarity of the figures, that the upper part of the body is too short. I found this to be more frequently the case with comparatively small figures than with larger ones. The total span of the extended arms is too large; less on account of a disproportionate

dimension of the arms—which in Group D have even a tendency to be below the average—than on account of a great and somewhat exaggerated breadth of the chest. The difference in the length of the arms, and the greater shortness of the upper part of the body, may be considered as the principal distinctive marks for the two classes in reference to the body; the following deviations from nature are nearly the same for both classes of images. The fore-arm is decidedly too short. The hand, when well executed, differs but very little; but in badly executed figures it is occasionally a little too long. The foot is tolerably well proportioned both in length and breadth, though in small figures its dimensions frequently exceed the mean proportion, particularly as regards the length; but these must be considered arbitrary, as dimensions below the average are scarcely less frequent in large-sized figures.

Details concerning the conventional or canonical costume of these statues, the objects which they hold in their hands, &c., might be added in great variety, and could easily be shown to corroborate the distinctions I have endeavoured to establish here by their *bodily proportions;* it will be sufficient, however, to refer the reader to the various and important researches published at various times in the volumes of the Society's Transactions and Journal.

Art. XXI.— *On the Inscription of Khammurabi.* By H. F. Talbot, Esq.

The first portion of the volume of Cuneiform Inscriptions, recently published by the British Museum, contains an important series of legends of the early Babylonian kings. These are written in the Proto-Chaldæan language, which as yet is little understood. I therefore heard with great interest that the Paris Museum possesses an inscription of one of these kings, Khammurabi, written in the Babylonian language, and that Messrs. Oppert and Ménant had presented a copy of it, together with a translation, to the British Museum. The accession of so ingenious a scholar as M. Ménant to the small band of Assyrian interpreters, is a subject of much congratulation, and in this instance he has certainly presented the world of letters with a valuable gift. I am indebted to my friend, W. H. Coxe, Esq., of the British Museum, for an accurate copy of this important document, and from it I have made the translation which I now beg leave to offer to the Society. It will be seen, that though agreeing with M. Ménant in many things, I differ from him considerably in some parts of the second column.

The language of this inscription is by no means so archaic as I expected to find it. In fact, except in greater simplicity of style, and shortness of lines, I do not see that it much differs from the language of Nebuchadnezzar's time. How far then must we recede into antiquity in order to find the beginnings of this Semitic tongue? Tiglath Pileser, in 1120 B.C., uses substantially the same language as Sennacherib and Sargon, and he seems to have been able to read the inscriptions of Ishmi-Dagon and others who lived at least 641 years before him.

Column I.

1. Khammurabi	..	Khammurabi
2. sar danu ..	..	the great king
3. sar Babilu	..	the King of Babylon
4. sar mustisimi	..	the king who wears the crown of
5. kibrati arba im	..	the nations of the four quarters of the world

6. kasit saniti the conqueror of the enemies
7. Marduk: of Marduk:
8. ship mutib the Monarch closely united
9. libbi-su anaku .. to his heart, I am he.

Observations.

Mustisimi. This participle seems to be another conjugation of *musim* or *musimmu*, crowning, or crowned: which comes from *sima* or *simat*, a crown.

Im, heaven: the sky. *Arba im*, the four quarters of the sky, the four cardinal points: an expression equivalent to "the whole world."

Kasit, conqueror: occurs frequently.

Saniti, enemies: from Heb. שנא to hate.

We find in other inscriptions *ir saniti*, the enemy's city.

Observe that Marduk is named in line 7 as the chief object of Babylonian worship in this king's reign. And so he continued to be for many centuries.

Ship. It is doubtful how this word was pronounced. It is a compound symbol formed of the syllables *pa. lu.* joined together. But as this was pronounced *ship* in the name of the city Borshippa or Borsippa, and elsewhere, I have adopted *provisionally* that pronunciation.

It also clearly denotes "a king" in the Proto-Chaldæan inscriptions.

In the great inscription of Nabonidus, col. III, he refers to ancient inscriptions of one of these early kings, Shaga-saltiash, whom he praises as having been *ship kinu, rubu nadu*, a glorious king and a noble prince.

The phrase *mutib*, or *mudib libbi-su*, occurs in several other inscriptions, always of a king beloved by his deity, or closely united in spirit with him.

Mudib means "joined." The first person singular *udib*, I joined, occurs in one of Sennacherib's inscriptions, *udibu bakhulati*, I joined together all the workmen, in order that by their united strength they might move one of the colossal bulls to Nineveh. This verb seems to be the Hebrew דבק to join: or, to cleave to a thing; but the final guttural is lost in Assyrian.

Libbi-su. There is no certain distinction in this inscription between the syllables *su* and *ku:* both are written by the same symbol. The same thing occurs in several other inscriptions.

Thus, in the description of a palace, some inscriptions read *ita-su* (probably its *interior walls*), while others read *italu*.

10. Ninu Il u Bel		The favour of God and Bel
11. nisi Sumirim..		the people of Sumiri
12. u Akkadim ..		and Akkadi
13. ana bellim iddinunu:	..	gave unto my dominion.
14. Tsirra gina ..		Their celestial weapons
15. ana gati-ya ..		into my hand
16. umallu ..		they gave.

Il. "the god," κατ' εξοχην, *i.e.* Marduk. The same phrase is used in the Assyrian inscriptions found at Nineveh, but *there* it designates Ashur.

Nisi. This word is generally written *un*, followed by a plural sign. I suppose that *un* was the Proto-Chaldæan word for "man." *Nisi* agrees with the usual Semitic term.

Bellim, command. This word is very frequent, especially in the phrase *ki bilim ili*, "by command of the gods." The king frequently boasts that the gods have lent him their own weapons. See Tiglath Pileser's inscription, &c.

Tsirra, supreme.

Gina or *zina*, weapons, is the Chald. *gin* גן armour, whence מגן armatus.

Umallu: properly, "they filled." Heb. מלא implevit. "They fill'd my hand," with their heavenly or powerful arms.

17. (nahal) Khammurabi	..	The river Khammurabi
18. nukhu's nisi ..	..	(so the people call it)
19. babilat mie kanik..	..	a canal of mingled waters
20. ana nisi Sumirim ..	..	for the use of the men of Sumiri
21. u Akkadim ..	..	and Akkadi
22. lu-akhri	..	I dug.

The word Khammurabi in line 17 is preceded by the usual symbol for "running water." As this was *the king's own name*, but here transferred to a river, or canal, the interposed observation, "so the people call it," *nisi nukhu-su*, comes quite naturally.

Babilat, M. Ménant renders this word "Babylonian." But this interpretation is quite set aside by the fact that Ashurakhbal when he rebuilt Calah dug a canal there, and says concerning it just what Khammurabi says here:—"I gave it the name of the *babilat kanik*."

I think it may be provisionally rendered "a canal of mingled waters," from Heb. בבל confusio. In fact, we learn from Sennacherib's inscription at Bamian, that he united the waters of no less than eighteen brooks to form a river at his palace near Nineveh.

23. kishadi-sha kilalin	..	Its banks, which had fallen in.
24. ana miri tur lu-utir	..	I restor'd to their former form.
25. karie ashnan ..	..	With new walls, or mounds of earth
26. lu-astappak ..	..	I heap'd them up.
27. Mie daruti ..	..	Perennial waters
28. ana nisi Sumirim	..	for the use of the men of Sumiri
29. u Akkadim ..	..	and Akkadi
30. lu-askun. ..	..	I prepared.

Kilalin, broken through. Perhaps from Heb. חלל perforavit, solvit, aperuit: and also subvertit, destruxit. This word seems well applied to a break in an earthen dyke.

Miri, work, workmanship. This word is often used in Sennacherib's inscriptions.

Tur, old, ancient, former: as *Haikal tur suatu*, that old palace: that former palace.

Karie is often used in the great E. I. H. inscription of Nebuchadnezzar, as is also *astappak*, in the sense of heaping up mounds of earth for the defence of Babylon.

Ashnan, new: from Heb. שנה *shana*, in another conjugation, *shanana* renovare (Ges. 1025).

Astappak is the ת conjugation of *shapak*, Heb. שפך effudit.

Mie daruti. See many other inscriptions. The kings prided themselves very much in bringing *perennial waters* into their chief cities.

Column II.

1. [*Un*] Sumirim ..	..	Of the tribes of Sumiri
2. u Akkadim ..	..	and Akkadi
3. kali-sun, [*un*] pakhati	..	all of them, the chief people
4. lu-upakhir, ..	..	I assembled together.

The word written *Un* [homines] was probably pronounced *Nisi*. Or perhaps the Semitic root עם populus was employed to express it. This, however, being uncertain, I have left it as [*Un*] in the present passage.

Kali-sun upakhir is a frequent phrase, whenever a king assembles his *principal noblemen*, or his *vassal kings*. Compare the Esarhaddon inscription, I, 27 (B. M., pl. 45), where the king says, *upakhir sarin Khatti kali-sun*, I passed in review, or I assembled, the kings of Syria, all of them.

Kali. Heb. כל omnis.

Upakhir. Heb. בחר examinare, probare: here, to inspect or review.

Pakhati. Heb. פחה *pakha* præfectus provinciæ (Gesenius). Here, magistrates: chief people. And so Bohlen, quoted by Gesenius, "magnates: proceres"—from a Persian root.

5. Mirita u maskita ..	..	With sights and shows
6. lu-askun sina sim.	..	I made amusement for them.
7. Innut sirik u kanik	..	With favours both great and small
8. lu-eri sinati: ..	..	I honour'd them:
9. subat nikhiti ..	..	and on seats of splendour
10. lu-shasib sinati ..	..	I seated them.

Mirita, sights: from the root *mar* to see, which occurs frequently in Assyrian.

Maskita, shows: is the Heb. *maskit* משכית imago, figura (see Ges. 623) from the Chaldee root שכא aspexit.

Sina, ludus. This word means, most probably, amusement or diversion, from the Heb. *senina* שנינה ludibrium. The root is שנן, from a simpler original root שן acuit. *Ex. gr.* acuit linguam (Gesen.) to use sharp or witty sayings.

Innut, favours. Heb. *hin* חין gratia.

Sirik is probably Heb. צרח clarus, manifestus.

Kanik I have rendered "small." It seems to have that meaning in the Phillips Cylinder, III. 16, where we read (....) si u kaniki, which may mean *large and small* (offerings). It may be related to the Heb. כנע humilis fuit.

Kanik is also a canal; but that meaning has no place here.

Eri. I think this verb may be the Heb. ירא coluit, honoravit.

Nikhiti is probably the same as *nukhuti*, from *nukhu* splendor, which I find in various passages of the inscriptions.

11. Ninumi-su ..	..	By his favor (viz., that of Marduk)
12. Khammurabi ..	..	Khammurabi
13. sar danu	..	the great king
14. migir il reb-reb anaku	..	the worshipper of the supreme god, I am.

Ninumi-su. See Col. I, 10.

Reb-reb, a Chald. word רברב, occurs in Dan. 4, 33, &c.

15. In emukin.. According to the oracles
16. gashrati infallible
17. sha Marduk iddinam .. which Marduk gave to me,
18. Til tsiram a lofty citadel,
19. in ebiri rabuti on a high bank,
20. sha risha-sun whose summits
21. kima ssatu im eli-ya .. tower'd like the vault of heaven above me
22. in resh (nahal) Khammurabi on the bank of Khammurabi river
23. nukhu's nisi (as people call it)
24. lu ebus. I built.

In Sargon's Cylinder, he says that he was commanded by infallible oracles to build a new city on the banks of a river.

Emukin, mysteries. Heb. עמק profundus.

Gashrati. Chal. כשר *kasher*, rectus, dignus. Perhaps translate, "the *direct* oracle."

In resh (of a river) is used in the Annals of Ashurakhbal to express "opposite the river," viz., the Euphrates: not "at its source," which was many hundred miles distant from the spot where he was then encamped.

25. Til suati That Citadel
26. Til ummu baniti "The Citadel of the mother who bore me
27. abim alidi-ya and of the father who begot me"
28. anaku lu-abbam. I named.
29. In Ri ummu banit .. In the holy name of Ri, the mother who bore me
30. abim pi alidi-ya and of the father who begot me
31. in kibrati during long ages
32. lu-shaib! may it last!

Abim. The final M or V seems to mean "and," so that *abim* may be rendered "*patrisque.*"

By his "father and mother" the king means the god Marduk and the goddess Ri. The citadel probably bore the name "Castle of Marduk-Ri." Nebuchadnezzar in his great inscription says, that the god Marduk was his father, and the goddess Makh or Mah his mother.

The construction of lines 29, 30, appears to be *in pi*, in the holy name of. The phrase occurs frequently. Often a king prays to a god to take a new palace under his protection and says, *lishakin in pi-ka*, may it stand firm in thy holy name! The full phrase is, *in pi-ka illiti*, in thy lofty or celestial name, which was not the same as that pronounced here on earth.

In kibrati, for long ages. From Heb. כבר diuturnitas temporis (Ges. 464).

Lu-shaib, probably from Heb. ישב mansit.

ART. XXII.—*Abstract of a Sanskrit Inscription, accompanied by a Decipherment of the Original.* By FITZ-EDWARD HALL, Esquire, M.A., D.C.L.

[*Read 6th July*, 1863.]

THE two facsimile copies from which the following inscription is edited were obtained, some years ago, from Colonel Dawes. This gentleman has had the goodness to inform me that the stone containing it "was found in a very old temple, which was filled with images of different kinds, situated in the village of Lakhamundul, in the Sirmoor District. It is on the right bank of the river Jumna, and only a few miles from the spot where that river leaves the Himalaya mountains. The slab was in good preservation; two feet by one and a half; and of good durable stone."

An account of the contents of this inscription was communicated to Mr. Edward Thomas by the late Professor H. H. Wilson; and that account,[1] with the exception of a few proper names, corresponds, as far as it extends, with the results of my own decipherment. The Sanskrit has not before been printed. A detailed translation seeming to be unnecessary, I shall confine myself, instead, to a report of the genealogical and other statements which the document comprehends.

First, we have a series of twelve Kshatriya kings,[2] claimed

[1] It will be found in Mr. Thomas's edition of Prinsep's *Indian Antiquities*, Vol. II., p. 245.

[2] With the name of each of them the word *śrí* or *śrímat* is connected; but, in all cases, I take it, simply to mark respect.

Yet there are names of which the syllable *śrí* forms a component part; and, in general, it is easy enough to decide whether it is so to be understood. Familiar examples are S'rídhara, S'ríkaṇṭha, S'ríkara, S'rínivâsa, and S'rípati. Before such appellations, at least in inscriptions, the complimentary *śrí* is, it appears, always omitted.

As to the first of the Guptas of whom we have any knowledge, it has been usual, with orientalists, to term him simply Gupta; and I believe that all of them who write S'rígupta write Gupta also, as if they considered the S'rí to be an honorific prefix merely. His name occurs, so far as is yet known, on only two occasions; once on the Bhitari pillar, and once on the Allahabad pillar: and in both places we find S'rígupta, "Fortune-protected." Apparently, it was a

as descendants from Yadu, and who governed the realm of Sainhapura.[1]

Senavarman.
A'ryavarman, son of S.
Devavarman, son of A'.
Pradíptavarman, son of D.
I's'waravarman, son of P.
Vṛiddhivarman, son of I'.
Sinhavarman, son of V.
Jalavarman, son of S.
Yajnavarman, son of J.
Achalavarman, son of Y.
Divákaravarman, son of A.
Bháskara, younger brother of D.

Of these magnates we are told little; and that little is very indefinite. Sinhavarman is said to have had signal success against

misapprehension with regard to S'rígupta's designation that has led to his being spoken of as "the founder of the dynasty known by his name." His being the founder of a dynasty does not follow from the fact that we have learned nothing of his ancestors.

For a S'rígupta who practised against the life of Buddha, see *Voyages des Pèlerins Bouddhistes*, Vol. III., pp. 18, *et seq.*

[1] The original has, distinctly, Sainghapura. Again, in the eighth stanza, it exhibits Singha, the name of a king. That these are vernacular forms which were current in the days of the inscription is not to be doubted. Still, it is most likely that their appearance in the inscription was due, not to the writer of it, but to the engraver: for, in the eighth stanza, there is also राजसिङ्घो, which the presence of a pun is insufficient to account for.

For जयसिङ्घ°, in place of जयसिंह°, in another old inscription, see the *Journal of the Bombay B. R. A. Soc.*, Vol. II., plate II., line 9.

It will scarcely admit of question that the kingdom of Sainhapura was likewise, and more commonly, known as Sinhapura. A region bearing the latter name is noticed by Hiouen Tsang, who expressly says, however, that it had no king of its own, and was a dependency of Cashmere. Westerly, it extended to the neighbourhood of the Indus; and its capital was in the mountains. This was in the seventh century. See *Voyages des Pèlerins Bouddhistes*, Vol. II., p. 162.

The second stanza of the inscription may be translated thus: "Among the monarchs born of the stock of Yadu, who, from the beginning of the *present* Yuga, have held the kingdom of Sainhapura, there was, in course, a regal saint, the auspicious Senavarman by name." Such is the more probable interpretation. Nevertheless, it is obvious to suggest that Sainhapura may have been indebted, for the name by which it is found designated, to Sinhavarman, its sixth master in descent from Senavarman.

certain persons of Solarian origin;[1] and Achala is mentioned as having possessed himself of Ghanghalá.[2]

Bháskara married Jayávalí, daughter of Kapilavardhana. Their daughter, I'śwará,[3] became wife of Chandragupta,[4] son of an unnamed Raja of Jalandhara. On the decease of her husband, who met his death while riding on an elephant, I'śwará founded a religious house, to honour his memory.

The inscription was composed by the king[5] of Ayodhyá, Vasudeva, son of Skanda, son of Kshemaśiva. Its engraver was an artificer[6] from Raudítaka, by name I'śwaraṇága, son of Nágadatta.

No inference, touching the length of time by which it antedates the eighth or ninth century, can safely be drawn from its palæography; and upon future research depends any accession of information bearing on the persons whom it enumerates.

THE JALANDHARA INSCRIPTION.

सर्गस्थितिलयहेतोर्विश्वस्य ब्रह्मविष्णुरुद्राणाम् ॥
मूर्तित्रयं प्रदधते संसारभिदे नमो विभवे ॥ १ ॥

[1] See stanza VIII.

[2] See stanza XII. I am at a loss to conjecture what this Ghanghalá could have been. Its name, which is said to express its character, looks like a depravation of the Sanskrit *janghála*, "fleet." The word occurs again in the fifteenth stanza; and *ghanghalabhaṭá* is met with in the fourteenth.

[3] No exception need be taken to the form *íswará*, even as a common noun, "mistress." It is the only form authorized by Páṇini: III., 2, 175. The *íswarí* of the *Rámáyaṇa* and later works is a deviation from the Páṇiníyan standard.

[4] It is not imperative to conclude, because of this name, that I's'warí, the daughter of a Kshatriya, was wedded to a Vais'ya. The ending *gupta*, it should seem, is not restricted to the appellations of members of that class. S'rígupta and his successors have been reputed to be Vais'yas; but I know not on what irrecusable authority. See Professor Wilson's translation of the *Vishṇu-puráṇa*, p. 479, foot-note 70. The rule of the *Mánava-dharma-śástra*, II., 32, as explained by Kullúka, has long been practically disregarded. Was Kálidása a S'údra?

[5] *Bhaṭṭa*, a corruption of *bhartṛi*. For its equivalence, as used by the humble, to *rájan*, see the *Daśa-rúpa*, II., 64. *Bhaṭṭáraka*, in the phraseology of inscriptions, is much more common.

[6] *Sútradhára*, literally, "cord-bearer." To judge from its etymology, it may have meant, originally, "one who holds a plumb-line." As found used, it import is wider.

यदुवंशभुवां राज्ञां सैंहपुरं राज्यमा युगाद्धताम् ॥
श्रीसेनवर्मनामा राजर्षिः[1] प्रक्रमेणाशीत् ॥ २ ॥

तनयस्तस्य श्रीमान्नृपतिरभूदार्यवर्मनामैव[2] ॥
आर्यव्रततां प्रथमं ख्यापितवांस्तदनुयंश्चरितैः[3] ॥ ३ ॥

श्रीदेववर्मनामा दत्ताभयविभवविजयविध्वंसः ॥
भीतार्थिकुलारिभ्यो बभूव तस्यात्मजो नृपतिः[4] ॥ ४ ॥

सूनुरभूत्तस्य महान्भूपालः[5] श्रीप्रदीप्तवर्मेति ॥
दर्पान्धशत्रुपृतनापतङ्गपटलीप्रदीप्ताग्निः ॥ ५ ॥

श्रीश्वरवर्मेति सुतस्तस्याभूद्भूपतिः[6] प्रदानेन ॥
ऐश्वर्यं यः[7] कृतवान्भव इव निचयेन नार्थानाम् ॥ ६ ॥

श्रीवृद्धिवर्मसंज्ञस्तस्य बभूवात्मजः प्रवृद्धश्रीः ॥
चन्द्र इव तापहारी नयनानां नन्दनो राजा ॥ ७ ॥

[1] I here substitute the *visarga* for *sh*.

[2] Corrected from -नाम्नैव.

[3] An *anuswára* has been supplied over य.

[4] "His son was the auspicious King Devavarman, so called; who inspired the timorous with fearlessness, conferred wealth on the needy, secured victory to his family, and wrought the destruction of his enemies."

The paltry figure of rhetoric exemplified in the Sanskrit is not unknown to mediæval Greek and Latin. Subjoined are some specimens:

Μάρτυς, βασιλεῦ, ἵππε, λόγχη, βάρβαροι,
Σύμπνει, δίωκε, σπεῦδε, πλῆττε, πίπτετε.

Hæc tria tabiscam pellunt adverbia pestem:
Mox, longe, tarde, cede, recede, redi.

And see, among English poets, Sir Philip Sidney.

[5] There is no *visarga* in the original.

[6] The original here has an *upadhmánîya*. But we have no type for it.

[7] Here the original has a *jihwámúliya:* and for this, too, a type is wanting.

I have exchanged क्रित° for कृत°.

स्वभुजार्जितसौर्यवशादानवतामुपरि[1] दृष्टसामर्थ्यः ॥
श्रीसिंहवर्मनामा तत्तनयो राजसिंहोऽभूत् ॥ ८ ॥

तस्य सुतोऽभूदाशापूरणकर्मा जनस्य तापच्छित् ॥
श्रीजलनामा नृपतिः कलियुगदावाग्निजलवर्षः ॥ ९ ॥

श्रीयज्ञवर्मनामा तदङ्गजोऽ भून्महीपतिर्येन ॥
यज्ञाज्यधूमजलदैर्निर्यत्केकाः[2] कृताः शिखिनः ॥ १० ॥

पुत्रस्तस्य बभूव श्रीमान्राजर्षिरचलवर्मेति ॥
कृतयुगचरितेष्वचलो यश्च स्थैर्यादिगुणसाम्यात् ॥ ११ ॥

यः समरे[3] घङ्गलाख्यामन्वर्थवतीं दधार रणरौद्रः ॥
[4]अपरापगणितसंगरकरिरदनाग्राङ्कितोरस्कः ॥ १२ ॥

तस्य दिवाकरवर्मा श्रीमांस्तनयो बभूव नृपतीशः ॥
यस्य दिवाकरताभूत्परतेजोभिभवधर्मेण ॥ १३ ॥

वारणविषाणसंकटसंगरबलचारिणः स्मृता यस्य ॥
अकरोदरीनशस्त्रान्सपदि महा[5] घङ्गलभटाख्या ॥ १४ ॥

[1] The unusual -यशादान° is deserving of notice.

[2] There is here a *jihwámúliya* in the original. क्रिताः is there put, by error, for कृताः.

[3] At the end of a *páda*, in the *Bhatti-kávya*, X., 14, an *anuswára* is taken to make no position; and the commentator, Bharatasena, citing relevant authority, holds that there is no breach of the laws of prosody. Such is the laxity, in a matter of metre, observable in a work written for strictly grammatical purposes. In aggravation of this laxity, the syllable *gha* of *ghanghalá* is reckoned as a single instant.

For the substance of this note, I have to thank Dr. Goldstücker, and also for the emendation of the sixteenth stanza.

[4] The verb *apagaṇ* I have not seen elsewhere. It is the same as *avagaṇ*.

[5] Almost certainly there is some mistake here.

तस्य कनीयान्भ्राता श्रीभास्कर दूत्यभून्नृपतिपालः ॥
रिपुघङ्गलाभिधानं योऽवहदाजौ विजयमन्त्रम्[1] ॥ १५ ॥

स्वभुजार्जितपरराज्यद्रविणसदादानकर्मणः पाणेः ॥
यस्यासीद्विमुखोऽसौ रिपुपृष्ठक्षणनसंस्थितिषु[2] ॥ १६ ॥

येनाभिरूह्य पद्भ्यां पतत्रिगम्यानि शैलदुर्गाणि ॥
आक्रम्य युद्धशौण्डा हस्तिकरं दापिताः क्षितिपाः ॥ १७ ॥

तस्य गुणार्जितदेवीशब्दा श्रीकपिलवर्धनसुताभूत् ॥
राज्ञी प्राणेशा श्रीजयावलीत्येकपत्नीव[3] ॥ १८ ॥

तस्यास्तनया साध्वी सावित्रीवेश्वरेति नाम्नासीत् ॥
जालन्धरनृपसूनोर्जाया श्रीचन्द्रगुप्तस्य ॥ १९ ॥

भर्तरि गतवति नाकं करिणः[4] स्कन्धाङ्गवास्यदमिदं सा ॥
तत्पुण्यायाकारयदाचार्यानुगतमाख्यानम् ॥ २० ॥

यावन्महीमहीधरजलनिधयो यावदिन्दुरवितारा: ॥
तावदिदमस्तु कीर्त्तिस्थानं श्रीचन्द्रगुप्तस्य ॥ २१ ॥

भट्टचेमग्निवात्मजभट्टस्कन्दादवाप्तशुभजन्मा ॥
भट्टवमुदेव एनां प्रशस्तिमकरोदयोध्येशः ॥ २२ ॥

अश्मनीश्वरणागेन[5] नागदत्तस्य सूनुना ॥
आलेखि सूत्रधारेण रौदीतकनिवासिना ॥ २३ ॥

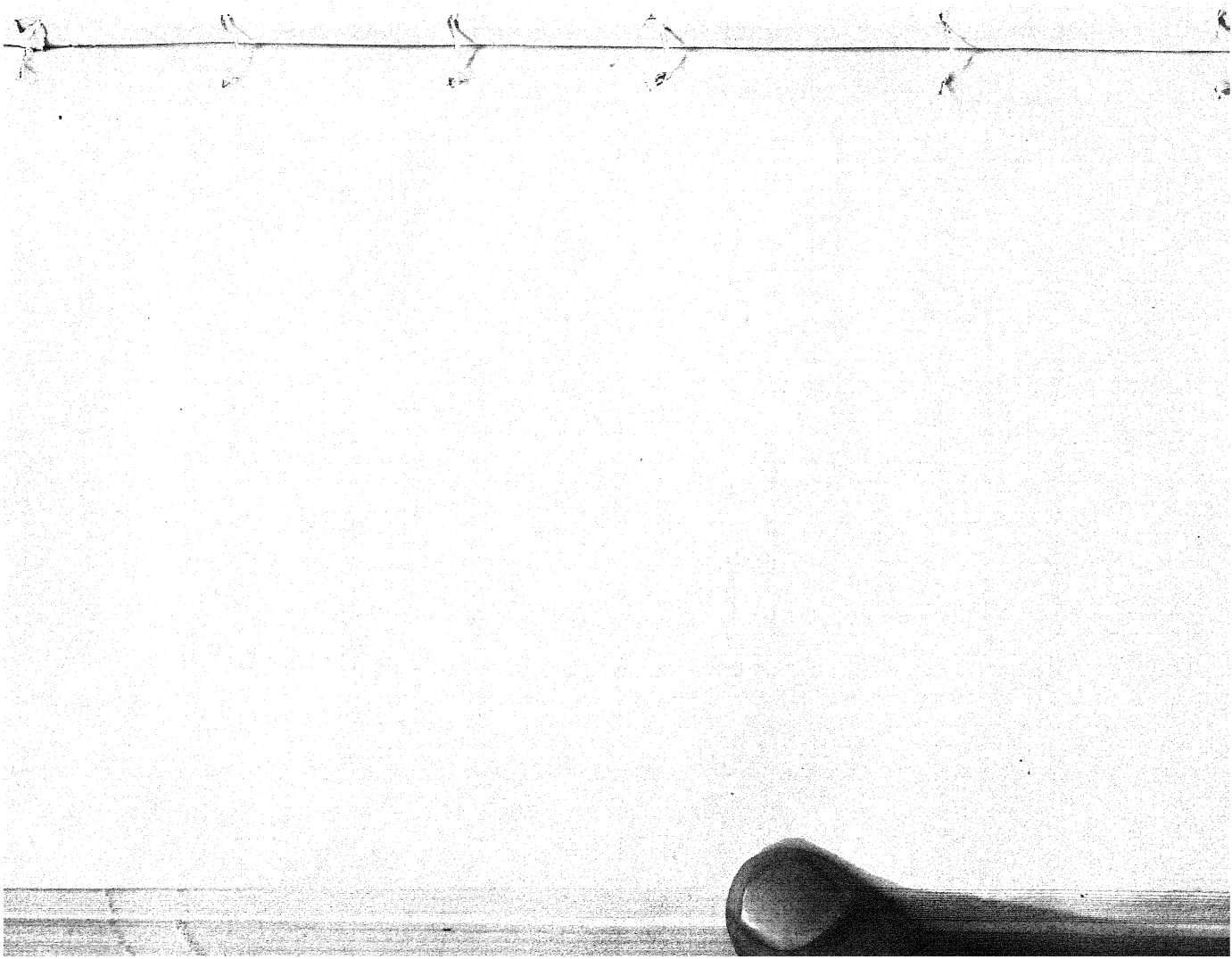
[1] I have added the last letter. Agreeably to the method followed in the inscription, there would here be an *anuswára*: a symbol that could easily escape the eye of a copyist.

[2] The facsimile, violating metre, has रिपुपृष्ठक्षणस्थितिषु.

[3] *Iva* may here mean the same as *eva*.

[4] The *visarga* is omitted in the original.

[5] Compare, for analogous instances, Páṇini, VIII., 4, 3 and 10.



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PRINTED BY HARRISON AND SONS, ST. MARTIN'S LANE.

ROYAL ASIATIC SOCIETY.

PROCEEDINGS

OF THE

FORTIETH ANNIVERSARY MEETING OF THE SOCIETY.

Held on the 18th May, 1863.

MAJOR-GENERAL SIR H. C. RAWLINSON, K.C.B., F.R.S., &c., &c.,

IN THE CHAIR.

THE following Report of the Council was read by the Secretary:—

The Council is happy to be able to commence its Report, by notifying to the Society, that His Royal Highness the Prince of Wales, who has just been admitted a Member of the Royal Asiatic Society by acclamation, has been further graciously pleased to accept of the office of Vice-Patron, which had remained vacant since the death of his illustrious father. The Council sincerely congratulates the Society on this auspicious event.

The Council have further to report, that during the past year, nothing more has transpired with respect to the proposed amalgamation of the Libraries of the East India Office with that of the Society, nor in regard to accommodation being afforded us in any public building, whereby our heavy outlay in rent, taxes, &c., might be saved.

The Society's Committee of Agriculture and Commerce, with the assistance of its Honorary Secretary, J. C. Marshman, Esq., has continued to hold meetings, and to consider the subjects of papers laid before it. Several of these have appeared in the Society's Journal, and others are intended for speedy publication. The amount of interest which it was hoped would be taken by certain classes in the pro-

ceedings of the Committee, has not been fully realized. Still, though the Committee will not, for the present, have occasion to call on the Society for any further pecuniary assistance, it will meet from time to time, to consider such questions of interest as may arise, and will communicate to the Society such papers of importance as may be laid before it.

Every effort has been made by the Council to ensure the regular quarterly issue of the Society's Journal. Unavoidable difficulties have, however, caused some delay in the appearance of the second part of the current volume, which has just been published. A greater amount of matter, also, than was at first anticipated, having, in consequence of his successful decipherments, accumulated in the hands of the accomplished author of the article on Bactrian Inscriptions, whereby the pages of the third part have been considerably encroached upon, it has been resolved to bring out the remainder of the volume in a double part, which will accordingly appear in July.

The attention of the Council has been particularly drawn to the expense attending the publication of the Journal. This has been found to press on our means, not only with severity from the largeness of the outlay annually incurred, but also with inconvenience, from its fluctuating character. Various propositions have from time to time been considered, with a view to regulating this expenditure, and reducing it within more moderate limits. Ultimately, the Council has decided upon contracting with an eminent London firm, Messrs. Trübner and Co., of Paternoster Row, for the publication of the Journal at a fixed sum per volume, exclusive solely of the charges for plates, woodcuts, maps, table-work, the use of very rare types, and alterations of, or additions to, original matter, when once in proof.

It is believed that this arrangement will be of some benefit to the Society as an actual measure of economy, while it is held for certain, that much greater publicity will be given to the Society's Proceedings among the Orientalists of the Continent, through the many foreign correspondents of Messrs. Trübner and Co., and that the reputation of our body will thus be proportionally increased.

It is proposed, under the new arrangement, to publish, as now, a volume of the Journal annually, divided into two, three, or four parts, at the discretion of the Council.

It may not be useless to call the attention of our Members to one of the charges, which, as above stated, are not included in the fixed contract with our publishers, viz., those arising out of alterations or additions in articles contributed to our Journal, after the same have been set up in type. The cost of such alterations or additions is sometimes very

considerable; and Members who favour us with papers, will at once perceive that this is an item of expense, in respect to which they can, in preparing their manuscripts, importantly benefit the funds of the Society.

At our last anniversary the circumstance was stated, that a collection of articles of various descriptions, natural and manufactured, had been sent by the Mysore Government to the International Exhibition, at the close of which they were to be presented to our Society. These articles have, accordingly, since been received, and are now added to our Museum.

The Secretary of State for India has kindly presented to our Library a number of valuable books, which we did not before possess, and of which duplicates existed in the Library of the East India Office; also the fourth volume of the "Rig Veda Sanhitá," edited by Professor Max Müller.

J. Muir, Esq., has presented the fourth volume of his "Sanskrit Texts," and Professor Goldstücker, the fifth part of his "Sanskrit Dictionary."

The Council has authorised the presentation of copies of our Journal to the Geological Museum of Calcutta, to the United Service Institution of Western India, and to the Library of the College of Civil Engineering at Roorkee.

The two copper plates mentioned in last year's Report as having been presented to the Society by A. A. Roberts, Esq., have proved to be fragments of one sole plate; and in the hands of Professor Dowson (aided by the suggestions of E. Norris and E. Thomas, Esqrs.), the inscription on them has not only been deciphered, but has proved the means of enabling several other relics from the Punjab to be satisfactorily translated, and has also furnished a key to the system of arithmetical notation used in that class of inscriptions.

The Council regrets to observe somewhat of a falling off in the number of our Members during the past year, the losses by death or retirement having rather exceeded the accession of new Members. And of these latter, a large proportion being non-resident, the pecuniary loss is even greater than the mere numerical diminution might indicate. The account is as follows:—

Elections.—Resident Members, six; *Non-resident*, ten. Total 16.

Deaths: Members who had *compounded* for their subscriptions, two; *Original*, one; *Resident*, three; *Non-Resident*, two. Total 8.

Retirements: Resident, fifteen; *Non-Resident*, two. Total 17.

Total loss.—*Compounded*, two; *Original*, one; *Resident*,

eighteen; *Non-Resident*, four. Making altogether, 25 Members.*

In money value these figures represent a yearly addition to our funds of only twenty-eight guineas, against a diminution of sixty guineas; and this again makes, as the general result, a loss of thirty-two guineas.†

It is computed that this year our income, with the aid of certain exceptional receipts, will quite cover our expenses. And, as the sum voted for the purposes of the Committee of Agriculture and Commerce has now been drawn, while there appears sufficient reason to anticipate that the new arrangement for the publication of the Journal will effect a saving on that head, it may be hoped that next year also our receipts will quite balance our expenditure.

Proceeding now to the notice of those of our deceased Members, respecting whom some little account has been found accessible, we have first to mention the late Henry, third Marquis of Lansdowne, K.G., P.C., who was one of the Original Members of this Society. His Lordship served on the Council for a short period from 1843, and the calls of business on his time was the sole preventive to his acceding to the wish of the Council to put him in nomination for election as

* *Elected.—Resident:* His Royal Highness the Prince of Wales; Rev. S. Beale; Hermann Bicknell, Esq.; S. E. B. Pusey, Esq.; Joseph Constantine, Esq.; Rev. Dr. E. Spooner. *Non-Residents:* Rajah V. L. P. N. Conjeveram; G. L. N. Chetty, Esq.; S. D. Nazimjung Bahadoor, Esq.; Dr. Bhau-Daji, G.G,M.C.; A. M. Dowleans, Esq.; Lieutenant S. B. Miles; M. Coomarasamy; W. Dickson, Esq.; Capt. M. W. Carr; Henry P. Le Mesurier, Esq.

Retirements.—Resident: W. A. Shaw, Esq.; Charles Gubbins, Esq.; T. Robinson, Esq.; Sir John Wedderburn; James Waddell, Esq.; Sir H. C. Montgomery; Edward Hamilton, Esq.; T. S. Gladstone, Esq.; Murray Gladstone, Esq.; Rev. T. Preston; A. B. Hill, Esq.; J. Jackson, Esq.; Colonel W. H. Sykes; W. P. Adam; Rev. Geo. Small. *Non-Resident:* Cotton Mather, Esq.; Captain H. G. Raverty.

Deaths.—Resident: Lieutenant-Colonel C. Thoresby; Walter Ewer, Esq.; Marquis of Lansdowne; Lieutenant-General Sir James Outram; Geo. Forbes, Esq. *Non-Resident:* T. A. Compton, Esq.; Lieutenant-General Cullen; Mirza Ja'fer Khan.

† 15	Retirements at three guineas.....	47	5	0			
2	do. at one guinea.....	2	2	0			
					49	7	0
3	Deaths at three guineas.....	9	9	0			
1	do. at two guineas	2	2	0			
2	do. at one guinea	2	2	0	13	13	0
	Total loss by deaths and retirements				63	0	0
6	Elections at three guineas	18	18	0			
10	do. at one guinea	10	10	0	29	8	0
	Total money loss.....				33	12	0

President. He was born on the 2nd of July, 1780, and was in his eighty-third year when a slight accident became the proximate cause of his death on the last day of January, 1863, he having succeeded to the Marquisate on the death of his elder brother in 1809. His Lordship's public life is too well known to need any comment here. Suffice it to say that he was beloved by all who knew him, and that he was ever noted as a generous patron of the arts and of literature, a promoter of education, and a liberal-minded man in every respect.

Lieutenant-General Sir James Outram, Bart., G.C.B., K.S.I., born in 1805, first went to India in 1819, and was shortly afterwards appointed a Lieutenant in the 23rd Regiment of Bombay Native Infantry. Serving with this he first achieved distinction by making, with two hundred men of the regiment, a forced march of thirty-five miles, attacking and capturing the fastness of an insurgent leader, who had hoisted the standard of the Peishwa, in a hill fortress in Candeish. The eye of Mountstuart Elphinstone, then Governor of Bombay, recognized the merit of the young officer. Promotion from regimental service to a civil mission followed; and from 1828 to 1835, we find Outram employed, first against, and then over, the wild and lawless Bheels of Candeish, ever giving fresh proof of the possession of great qualities, not only as a soldier, but also as a ruler of men. From 1835 to 1838, he was employed in establishing order in the Mahee Kanta, a province of Guzerat.

On the breaking out of the war in Afghanistan in 1838, Outram, as many others, laid down his civil appointment, and was made an honorary Aide-de-Camp on the staff of General Sir John Keane, who was then commanding the Bombay division of the army sent against Dost Muhammed Khan. By the greatest activity, Outram nearly succeeded in hunting down this celebrated chief; but he generously refused to effect the capture of the fugitive when a traitor offered him the means.

Outram afterwards joined the expedition of Sir T. Willshire against Khelat in Beluchistan. After the capture of that stronghold, he volunteered to carry the General's dispatches to Bombay through the enemy's country; and this service he performed by disguising himself as a holy man, and travelling, in one week, a distance of three hundred and sixty miles to Kurrachee, whence he proceeded by ship. For these various proofs of zeal and ability he was gazetted a Major in the army, and was soon after named Political Agent in Lower Sind. Here, uniting, as before, vigour in action with sympathy and kindness whenever he could create the opportunity, he soon gained the confidence of the Hyderabad

Ameers, as he did also that of Nusser Khan, the youthful successor to the throne of Khelat, when afterwards summoned to the post of Upper Sind.

During the disasters of the army in Afghanistan, in 1841-2, Outram was firm in advising that the foe should be chastised; and he rendered most eminent service by throwing into Kandahar, at that critical juncture, troops, stores, ammunition, and money.

Outram was at Hyderabad in Lower Sind, when General Sir C. Napier advanced on that place to coerce the Ameers into the adoption of a new line of policy. Notwithstanding the entreaties of the Ameers, and their declarations that they would be powerless to control the populace, Outram remained at his post. His defence of the Residency, when at length assailed by the Beluchis of the place, has been called one of the brightest records on the page of Indian history. General Sir C. Napier had before this styled Outram the Bayard of India; but the policy now adopted in Sind, and the series of operations which thence ensued, brought on between these two great men a controversy which has been universally regretted. But Outram stedfastly adhered to his principle of dealing kindly and justly to the inhabitants of our Indian empire—principles on which he acted alike while Commissioner in Sind and while in the Mahratta country as Resident at Sattara, to which latter post he was appointed in 1845. He had previously visited England on furlough, and after his return to India had again adorned his name by a series of worthy exploits in Kolapoor and Sawuntwaree against the local insurgents.

In 1847, Sir George Clerk appointed him Resident at Baroda—the highest post in the gift of the Governor of Bombay. Removed from thence by Sir George's successor, Outram again visited England, and on his return to India was appointed to Aden.

When Lord Dalhousie, in 1855, resolved on the annexation of Oude, Outram was selected to carry out the measure, which he did with all the consideration in his power. His health then failing he came to England in 1856; but the war with Persia soon caused his services to be again required, and he was appointed to command the expedition to Bushire. Completely successful, he soon forced the Court of Teheran to sue for peace, and so to set him free to fly to the aid of his countrymen imperilled in India itself by the outbreak of the Sepoy Mutiny. Having been appointed Chief Commissioner of Oude, he marched to Cawnpore, united his corps to that under the heroic Havelock, and then proceeded to the first relief of the small garrison of Lucknow, beleaguered in that place by hosts of rebels and mutineers. In this advance he

most generously put his Commissionership in abeyance, and volunteered to serve under Havelock as a subordinate. The devoted gallantry displayed by the garrison of Lucknow, both before and after Outram and Havelock had joined them, is too well known to need more than a passing allusion here. Afterwards, on the first advance of Sir Colin Campbell, his relief of the garrison, and his subsequent retreat to Cawnpore, Outram was left in charge of the post of the Alumbagh, which he not only defended for three months against immensely superior numbers of assailants, but from whence he succeeded in implanting in the minds of the great landed chiefs of the province the idea that the power of England must prevail. In the final attack on Lucknow, Outram had command of the force detached to the other side of the river, crossing it finally into the town by the Iron Bridge. He was then installed as Chief Commissioner of the province, and did much, by his conciliatory policy, to facilitate its ultimate pacification. Returning to Calcutta, he took his seat as a member of the Supreme Council, and there displayed his usual energy, tact, and devotion. The climate, however, proved too much for his already impaired health. He left India for the last time in 1860, and spent the winter of 1861-2 in Egypt, where he seemed to have somewhat recovered, and came to England for a short time last summer. Under medical advice, however, he again left for a milder climate, and repaired to Pau, residing there for several months. The change was unavailing, and his death occurred there on the 11th of March, 1863, when he was but fifty-eight years of age. In recognition of his splendid character and services, his remains were honoured with a public funeral in Westminster Abbey, and it is hoped that the memorial statue which Outram's friends have voted him, and which has recently been executed by Mr. Noble, may be allotted a place in Trafalgar Square, where it will form a striking and not inappropriate pendant to that of his great rival, the late General Sir Charles Napier.

Walter Ewer, Esq., was the son of a gentleman who had been for some time Governor of the then British settlement of Bencoolen in the island of Sumatra. Having been educated at a private seminary, he proceeded to India in 1803 as a member of the Bengal Civil Service. He joined the College of Fort William, at a time when that institution was in full vigour as a school of Oriental literature; and having great natural talent for the acquisition of languages, he took full advantage of the facilities for those studies which it then afforded in an eminent degree. He distinguished himself by his proficiency in Persian, Arabic, and Urdu; at the same

time obtaining collegiate honours by his knowledge of the laws and regulations of the local Government, and by the composition of an essay on the English language.

On leaving college he joined the judicial branch of the service, and was for some time attached to the District Court of Rajeshye. Thence he proceeded to Amboyna, as First Assistant to the Resident, W. B. Martin, Esq., of the Bengal Civil Service, holding, under that gentleman, the government of one of the subordinate islands, in which he exercised the mixed political and judicial authority of Lieutenant-Governor.

Returning to Bengal in 1816, he was appointed Judge and Magistrate of his old district of Rajeshye; and after holding that office for about three years, having early become marked as an able administrator, he was selected for the important situation of Superintendent of Police in the provinces of Bengal, Behar, and Orissa, and was subsequently transferred, in a like capacity, to the conquered and ceded provinces. This post he continued to occupy for nearly ten years, being at the same time more than once charged with temporary commissions, involving duties of more than ordinary trust and responsibility.

After a short service in the Revenue Department as Commissioner for Delhi, he was restored to the judicial line by an appointment to the high office of Judge of the Sudder-Dewanee and Nizamut-Adawlut of the Upper Provinces. This situation he held till his resignation of the Company's service in 1839-40, when he returned to England after an unbroken career of public duty of more than thirty-five years. He died at his residence in Portland Place, London, after a short illness, on the 5th of January 1863, at the age of seventy-eight.

Mr. Ewer's talents were of a high order. Possessing great quickness in the acquisition of knowledge, and equal clearness in the application of it, he occupied a foremost rank among the public servants of the Government; and his ready intercourse with the inhabitants, while affording him an accurate knowledge of the thoughts and feelings of those over whom he was placed, secured for him at the same time that popularity and influence among them which have never been withheld from any English functionary of high rank in whom our Indian fellow-subjects have recognised a genuine sympathy and interest in their welfare.

His reading was extensive, and his scientific acquirements were surprisingly great, considering the comparatively little leisure he could command from his official labours, and the necessarily itinerant life which those labours involved. Music, or astronomical observations, formed his favourite source of relaxation. In all his wanderings he carried with him his piano, and, with other mathematical instruments, a powerful

telescope. This last, indeed, he applied to an unusual purpose, of which the mention may be not without interest to this Society, viz.: when he visited Delhi in 1822, that singular structure, the Cootub Minar, was in such a state of disrepair as to prevent any access to the inscriptions which surround its several galleries.* These Mr. Ewer was able to read with the assistance of his telescope of great magnifying power, and the result of his observations was communicated to the Asiatic Society of Bengal in a paper which is published in the fourteenth volume of its Transactions—a notice which doubtless influenced the Government in the adoption of measures subsequently taken for the preservation of that and other interesting remains in the vicinity. He also sent memoranda of the latitude and longitude of various places, determined by himself, to Arrowsmith, and to the Royal Geographical Society, for the correction of the then very imperfect maps of Upper India.

It is to be regretted that so accomplished a scholar as Mr. Ewer did not, after his return from India, show a more sustained devotion to the cause of literature; and it is especially to be lamented that he caused to be destroyed a valuable series of notes, in which he had recorded the results of much varied and extensive observation, and of which the value was estimated very highly by competent judges to whom the manuscript was communicated. They appear to have contained much which, without any elaborate preparation, would have afforded materials for very interesting communications to this and other Societies. Some time before his death Mr. Ewer presented his astronomical instruments to the Royal Geographical Society, of which he was a member, having also the distinction of being a Fellow of the Royal Society.

This is not the place for entering on any details of private life. It may suffice to state that no man could be more generally loved than Mr. Ewer, while his social and conversational talents amply sustained his high character as a public functionary, and strongly impressed those who were brought most intimately into association with him, with a cordial admiration of his genius, but also with a deep regret that a certain indolence of disposition should prevent the full development of his natural gifts. He was, indeed, a delightful companion, ever ready to impart his knowledge to those who sought it, and, while generally calm and undemonstrative in his demeanour, was ever a most genial and much valued member of the circle in which he moved.

Colonel Charles Thoresby went first to India in the

* For a full account of the inscriptions at Delhi, with their latest readings, see Thomas's edition of Prinsep's works, vol. i, p. 326.

year 1809, to join the Bengal Native Infantry. After passing his examination in the Hindustani language, he was attached to the 34th regiment in that force, and in 1810 went as a volunteer to the Mauritius. On his return he joined his regiment for a short period. Having leisure, then, to study, he acquired considerable proficiency in several of the Indian languages, ancient and modern, and was appointed to be one of the Secretaries of the Hindu College at Benares, where he continued about ten years. After this, Lord William Bentinck, then Governor-General, judging that the services of this officer would be useful in the Civil Department, employed him, in 1835, as his Political Agent in settling the new State of Shekawattee. He there managed affairs so judiciously, and established such order in the district, that he was soon afterwards appointed to be Resident at Jypoor, and lastly to the still more important post of Resident at Nepaul at the time when the Sikh war broke out in 1848, and when there was so much dread of a general insurrection of the Native Powers. Having remained there three years, and been above forty years in India without a furlough to his native country, he resigned the service and returned to England in 1850, residing for the last ten years at Torquay, where his benevolence and liberality acquired for him the esteem and affection of a large circle of friends and of the inhabitants in general.

Lieutenant-General William Cullen, late of the Madras Artillery, went to India in 1804, and served in the field at Candeish and Berar with the Hyderabad subsidiary force in 1805-6, commanding a brigade of artillery at the surprise of a large Mahratta force in the former year. He was present at the capture of St. Denis, in the Isle of Bourbon, in 1810, and also with the force employed against Kurnoal in 1815. He attained the rank of Colonel in 1842, and that of Lieutenant-General in November, 1851. Meanwhile, on the decease of Colonel Maclean, General Cullen had been appointed Resident of Travancore and Cochin in September, 1840, retiring from that post in January, 1860. After his retirement, he continued to reside at Travancore; but was on his way to the Neilgherries for the benefit of his health, when he was attacked at Quilon with fever and ague, and expired at Allepey on the 1st of October, 1862, at the age of about seventy-six.

REPORT OF THE ORIENTAL TRANSLATION FUND COMMITTEE.

The translation of Ibn Khallikan by Monsieur le Baron de Slane, of which two volumes and the first part of a third have been published, has been suspended since 1845. It was

resumed at the request of the Committee last year, and the learned translator has made considerable and satisfactory progress in bringing the work to a conclusion. The second part of the third volume, and one additional volume will most probably complete the whole. It is proposed not to commence printing until the entire manuscript is nearly ready.

It is hoped that a small volume of miscellaneous translations may also be published this year. The expense of these publications will exhaust the resources of the fund at present available.

REPORT OF THE COMMITTEE OF AGRICULTURE AND COMMERCE.

It was stated in the last Report that the Council had determined to revive the Committee of Agriculture and Commerce, with the view of collecting, digesting, and diffusing, information regarding the productive resources of the East, and of India in particular. The Committee reported last year that four papers had been brought forward at their meetings. They have now to state that since the issue of the last Report, nine papers have been read and discussed at the meetings which have been successively held, on the following subjects:—

1. On the Production of Cotton in Bengal, by the Secretary.
2. On the Cultivation of Cotton at the Madras Presidency, by the Secretary.
3. On the Soil, Climate, and Productive Resources of East Berar, by Captain Meadows Taylor.
4. On the Supply of Cotton from the East Indies, by Mr. Fincham.
5. On Indian Railways, by the Secretary.
6. On the Prospects of the Supply of Cotton from India in the present year, by Mr. Fincham.
7. On the Progress of Cotton Cultivation in the district of Dharwar, by the Secretary.
8. On the Cultivation of Flax in the Punjab, by the Secretary.
9. On the Resources and Prospects of the Central Provinces, by the Secretary.

The Committee have to state that of the sum of £100 placed at their disposal by the Council, there still remains in hand at the present time, £15 18*s.* 3*d.*

They regret to observe that there has not been that interest manifested in the revival of these discussions, which they had expected to find at a time when the material improvement of the various dependencies of England, and the development of their resources had become an object of national

importance. Their meetings have been feebly attended, and the compilation of papers has devolved almost exclusively on their Secretary. In these circumstances they cannot venture to solicit the Council to renew the grant. But they would propose that the organisation of the Committee be maintained, in order that meetings may be convened whenever papers of sufficient interest, and falling within the scope of the Committee's labours, have been presented, or whenever it may be deemed advisable to collect information with a view to the discussion of any question of general importance and interest.

AUDITORS' REPORT FOR THE YEAR 1862.

The Auditors beg to report, that they have carefully examined the accounts of the Society for the year 1862, and have found them correct.

	£	s	d
The balance on hand, 31st December, 1861, was	323	5	4
Outstanding liabilities	230	18	5
Leaving a balance applicable to 1862 ..	92	6	11
The receipts in 1862, were	881	2	6
Total Credit	973	9	5
Expenses of the year 1862	705	17	6½
In hand, 31st December, 1862	267	11	10½
Outstanding liabilities	188	14	10
Leaving a net balance applicable to 1863 ..	78	17	0½

Your Auditors desire to draw the attention of the Society to the evident deduction from the above statement, that the present income is barely sufficient to meet the requirements of the Society, and to impress upon the minds of its Members the continued necessity for strenuous efforts in its favour.

FRED. FINCHAM, *Auditor for the Council.*
E. C. RAVENSHAW, }
THOS. OGILVY, } *Auditors for the Society.*

The reading of the Reports being concluded, SIR H. RAWLINSON rose and addressed the meeting as follows:

Gentlemen,—In the absence of our zealous and accomplished President, it becomes my duty to make a few observations to you on the subject of the Annual Report, which has

been read to you by our Secretary. If we were to estimate our position solely by the number of our subscribing members, then, no doubt, I should have to address you, on the present occasion, in tones of apprehension, if not of despondency; for, as you will have observed, the secessions from our ranks during the past year far out-number the additions. But our pecuniary condition, although a very important item in our welfare as a Society, is not the only—nor, indeed, the most essential—matter that we have to consider. So long as we can pay our way—and I see no reason at present for doubting that we can do so—we may go on steadily in our path, working out unostentatiously, but still with earnestness and success, those great objects for which the Society was constituted; and we may even increase in reputation and in usefulness, though shorn of our numerical strength. The main object, indeed, to which I think our attention should be directed is the position that we hold as a body of Orientalists, in relation to the other great Oriental bodies of Europe, Asia, and America; and this position depends, as I need hardly remind you, on the character of the papers that we publish to the world Here, then, there is certainly no falling off. The papers which have appeared in the two first parts of our Journal, published since the last Anniversary Meeting, are in every respect worthy of the Society. Two, indeed, of these papers, that by Mr. Thomas on Bactrian Coins, and that by Mr. Dowson on the Bactrian Pali Inscriptions, are, perhaps, the most important contributions that have been ever made to this particular branch of Eastern archæology; and I believe that the forthcoming double number of the Journal will contain articles that will still further raise the reputation of our Society, both at home and abroad. The papers, also, that have been collected by our Committee of Agriculture and Commerce, and for which we are mainly indebted to the indefatigable Secretary of that Committee, Mr. J. C. Marshman, are of the utmost value in placing before the world, in a condensed form, extensive and varied information with regard to the productive resources of India.

It is a rule in many Societies that the President should, at the Anniversary Meeting, report on the progress during the past year, of that branch of science for which the Society is specially instituted; and it is to be hoped that hereafter, in our own Society, so very excellent a plan may be adopted and persevered in. I am not myself prepared to enter at present upon such a review of Oriental science. I can merely indicate, in the briefest manner, a few recent or forthcoming works on which the Orientalists of this country may be congratulated. Firstly, then, Professor Goldstücker has published another part of his Sanskrit Dictionary, which is, in every

respect, worthy of his high reputation. This dictionary, indeed, is a vast improvement on that published by the late Professor Wilson, and, when completed, will be the standard authority in this branch of Eastern learning. Secondly, the opening volume has at last been printed of Mr. Lane's great Arabic Dictionary, on which that indefatigable scholar has been employed for the last twenty years. The remaining volumes will now follow in rapid succession, all the materials being already prepared for the press, and I think we may safely predict that this great work, which thoroughly exhausts the subject, and which is at once critical and practical, will, in a short time, supersede all the other Arabic lexicons now in use. Thirdly, the British Museum is about to publish two volumes of great interest for Oriental students; one being a collection of Phœnician Inscriptions from Carthage, edited and translated by Mr. Vaux, and the other a series of Himyaric Inscriptions, which have been copied from copper plates brought to this country from Southern Arabia by General Coghlan, and which are being edited and translated by Mr. Franks.

But if I thus confine myself to the briefest notice in alluding to works of general interest to Orientalists, I can describe, in somewhat more detail, the progress of research and discovery in that particular branch of enquiry, which forms the subject of my own studies, and which has been so much discussed in the pages of our Journal: I mean, of course, the Cuneiform Inscriptions.

During the past year, I have been principally occupied in examining and preparing for publication a selection from among the many thousand fragments of clay tablets from Nineveh which are preserved in the British Museum; and some very important discoveries, both ethnological and historical, have resulted from this examination. It seems to be now pretty clearly ascertained that the primitive population which occupied the valley of the Tigris and Euphrates was of the Semitic family, and that this population was partially displaced in Babylonia, about 2500 B.C., by Turanian tribes from the Persian mountains. These Turanian colonists, moreover, appear to have brought in with them the use of letters, and they may be thus supposed to represent the Zoroastrian Medes, who, according to Berosus, furnished the first historical dynasty to Babylonia, and who are further generally described by the Greek traditionists as having contended with Ninus (the Eponyme of the Semitic race), and as having introduced the arts of magic (*i. e.*, of writing) into Western Asia. There were probably many successive immigrations of mountaineers into Babylonia and Elymais, and many different languages seem to have prevailed amongst the colo-

nists; each tribe, indeed, having its own dialect and independent vocabulary, although all belonging to one great ethnic family; and it is further curious to observe the large proportion of Aryan roots and Aryan nouns which these Turanian inscriptions exhibit, as if the two races had been completely intermixed in their primitive seats in Central or Eastern Persia.

We also find, that there was an independent Semitic empire in Assyria, in the very earliest times, co-existent with a Turanian empire in Babylonia, and we are thus led to suspect, that the chronology of Berosus, and the chronology of Ctesias, which have been hitherto supposed to be absolutely incompatible, may be partially reconciled with each other as applying to two different countries. It may further be noted, that there is no indication of a change of dynasty in Assyria, from the first institution of the empire, down to the destruction of Nineveh, in about B.C. 625; whereas in Babylonia several successive races seem to have risen to power, the Turanians being finally expelled from the sovereignty in the twelfth or thirteenth century B.C. A Turanian dialect however, continued to be the prevailing language in Babylonia, down to the age of Nebuchadnezzar, or even later.

The most important historical result which has followed from the examination of the Museum tablets, has been the discovery of what is called the Nineveh Canon; that is, a catalogue of the archons, or Eponymes, who gave their names to the Assyrian year, extending over a period of about two centuries and a half, or from B.C. 900 to B.C. 650. Unfortunately although there are fragments of four independent copies of this canon, a complete list cannot be made out. The beginning is wanting in all, and the several lists close at different periods of history. As the durations, however, of the reigns of the Assyrian kings are duly marked in the Canon, we are able to define the dates of the contemporary kings of Judah and Israel, relatively to each other, and some very important rectifications are thus obtained of the received Scripture Chronology. The several copies of the Canon have been lithographed, in fac-simile, and will be published with ample illustrations in an early number of the Society's Journal.

The only other subject to which it is necessary to refer, is the discovery of a certain number of bilingual legends in Assyrian and Phœnician. In the present advanced stage of Cuneiform decipherment, a bilingual key can hardly be of any real use, as far as regards the identification of the phonetic value of the different signs. It may serve, however, to supply an answer to those sceptics of the school of the late Sir George Lewis, who require the direct testimony of a known language and character, before they can believe in the

possibility of reading an unknown character, and resuscitating an unknown language; and this purpose the bilingual legends, limited as they are in extent, may be said to have actually achieved; for any one may now compare an Assyrian name, as written in Phœnician, with its correspondent in Cuneiform, and thus satisfy himself that the phonetic powers which have been given to the Cuneiform signs are correct. The history of the discovery is simply as follows:—I had occasion to examine with care the whole collection in the British Museum of small bulging tablets (which are for the most part legal documents, deeds of sale, &c., &c.) for the purpose of verifying the names of the Eponymes, which furnished the dates; and in the course of this examination, I found that in several cases there were a few words or lines of Phœnician writing scratched on the edge of the tablet. A further scrutiny satisfied me that the Phœnician legend was a mere docket or endorsement,—stating the general purport of the Cuneiform text,—which had been scratched, for the convenience of reference, on the tablet by the librarian, or keeper of the records, who was probably a native of Phœnicia. Having copied all the fragments I could find, I was thus able to exhibit some ten or twelve names and words written both in Phœnician and Cuneiform. The key, if it can be so called, has not furnished me with a single new reading, and I cannot, therefore, consider it of any real value; but still, as a mere matter of curiosity, I propose to publish the bilingual readings before long in the Society's Journal.

Before concluding this brief review of Cuneiform progress during the past year, it is only proper that I should draw attention to the labours of Messieurs Oppert and Ménant, in France, and of Dr. Hincks and Mr. Fox Talbot, in this country. Although I am not prepared to accept all the results which they have put forward, and although I think, as a general rule, that the work of translation should be pursued with more caution and reserve than they have usually displayed, still I am bound to admit, that the papers which have severally appeared in the *Journal Asiatique* and the *Annales de Philosophie Chrétienne*, in France, and in the *Journal of the Royal Society of Literature*, in our own *Journal*, and more recently in *The Atlantis*, in England, have greatly advanced our acquaintance with the Assyrian language; and I regret extremely, that owing to the slow process of lithography, and the difficulty of obtaining correct impressions of the minute and half-obliterated writing on the Museum clay tablets, I have not been able before this to place at the disposal of my fellow-labourers the second volume of the *Cuneiform Inscriptions of Western Asia*, which, containing as it does, nearly 300 explanatory lists and vocabularies, would have so greatly

facilitated their studies, and improved the accuracy of their results. The volume in question is, however, now nearly completed, and will certainly be published during the ensuing autumn.

In conclusion I would only reiterate the appeal which was made last year by our accomplished President to all those interested in the cultivation of Eastern science, that they should rally round this Society, and by their united efforts place it in the proud position which it formerly occupied, as the Oriental mouth-piece of England. The India Board has given proof of the interest which it feels in our proceedings, and the confidence which it reposes in us, by continuing to the Society the full yearly grant of two hundred guineas. Let us show that we appreciate this support, and are not unworthy of it.

When Sir Henry had concluded his remarks, General Briggs rose and proposed:

"That the Report of the Council, with those of the Committees and of the Auditors, be adopted for circulation, and that the thanks of the Society be offered to the Auditors for the trouble they have taken in verifying the correctness of last year's accounts."

In rising to propose this motion, General Briggs said: He congratulated the Society on its satisfactory condition as regarded its funds, so much improved in the last few years. He considered the Auditors entitled to our thanks for the voluntary labour they had bestowed in examining and testifying to the correctness of our accounts. He could not, however, sit down without expressing his admiration of the extremely interesting account which the gallant Chairman, our Director, had given of the progress made in the examination of the rich stores in the arrow-headed character which had been brought to light by modern research. He had heard this day various details of the existence in ancient times, among a people of whom our knowledge was still very small, of a methodical frame of society of which we had hitherto had but the most confused accounts. The discovery of the several elements of a very complicated social system had been mentioned to us with a clearness most admirable, and with proofs incontestible, which in bygone days could not have been hoped for. The gallant gentleman concluded by congratulating the Society on the eloquent discourse to which they had just listened with so much attention and pleasure.

Captain W. J. Eastwick having seconded the motion,

it was unanimously adopted; and F. FINCHAM briefly returned thanks for the Auditors.

SIR HENRY RAWLINSON then proposed:

"That the thanks of the Society be conveyed to the President, Lord Strangford, for the sustained interest he has shown in every question connected with the welfare and influence of the Society."

The motion was seconded by M. P. EDGEWORTH, ESQ., and adopted unanimously; when the RIGHT HON. HOLT MACKENZIE rising, moved:

"That the thanks of the meeting be offered to the Director for his valuable co-operation in conducting the affairs of the Society, and for his kindness in presiding on the present occasion."

In proposing this resolution, MR. MACKENZIE said: He believed that he need say very little in support of his proposal. Every member of the Society being, he imagined, fully acquainted with the eminent position held by Sir H. Rawlinson as an Orientalist, and with the works by which he had given lustre to the Transactions of the Society. They could not forget that in taking the office of their Director, Sir Henry succeeded one who stood, not only among themselves, but by every European reputation, in the very foremost rank of Oriental scholars—Horace Hayman Wilson, the worthy successor of their first Director, the illustrious Colebrooke—and it was no small praise to assert that he had worthily supplied the place of those eminent men. But without presuming to do more than to echo the general sentiment on that point, he ought, as a Member of the Council, to bear testimony to the constant zeal with which their Director exerted himself to promote the prosperity and reputation of the Society, and to the efficiency with which he influenced and guided the proceedings of their Council. He need not say one word as to the obligation due to Sir Henry Rawlinson for the manner in which he had presided at that meeting. They themselves would duly estimate the interesting address with which he had favoured them; and though they had never probably shared the doubts which an ill-informed criticism endeavoured to cast on the results of those researches that had given an historical value to the Cuneiform inscriptions, and shed light on so large a field of ancient story, previously involved in darkness, they could not be but gratified to learn that their Director was now able to satisfy the most incredulous, by a proof scarcely less satisfactory than if he had been able to appeal to a bilingual inscription of the monuments he had deciphered.

Before resuming his seat he wished to express his full concurrence in the sentiment that there was no reason to despair of the future of their Society; while there appeared to him many grounds on which more than ever the necessity of such an Institution was established, and on which its Members might justly be urged to exert themselves to give increased life and vigour to its proceedings, by papers and discussions calculated to make Oriental subjects, and especially questions relating to the great Hindu and Moslim nations who were their fellow-subjects of the British Crown, better known in this country than they now are. They could not but perceive that many influential classes and persons otherwise distinguished by extensive knowledge, did constantly exhibit a marvellous want of accurate information in regard to the East, and to the circumstances even of those whose destiny depended largely, for good or evil, on the acts of the British Government. A curious illustration of this he met with a short time ago, in an ingenious work published by an eminent statesman, recently lost to this country (a man he believed equally and deservedly loved by his friends, and lamented by the community, and who would generally be recognised as one of the most learned and best informed of our public men)—he meant the dialogue on the best form of government, by the late Sir G. C. Lewis. For in it he found it gravely stated that the Orientals were scarcely, if at all, less inferior in intellect to the Europeans than they were superior to the Negro; and that of their literature there was nothing worthy of the regard of scholars, excepting (what do you think) the Arabian Nights' Entertainments. In the same work their moral condition is spoken of as so utterly degraded (and the sentiment applied apparently to the whole of the vast region from the western extremity of Arabia to the eastern limits of China), as to make it hopeless to think of their co-operation towards self-government. So also in a recent number of the *Edinburgh Review*, there is an able article attributed to a nobleman high in office, and at all events important from the place where it is to be found, in which all private property in the land in India, unless directly bestowed by the Government, is apparently denied, and the right of Government to deal with it according to their pleasure seems to be asserted or inferred. Need he in this Society state the momentous consequences which are likely to follow from the practical application of such opinions, such principles,—or how likely legislation, however well intentioned, touching the dearest interests of the people (they all knew how that people clung to their native villages and paternal fields),—was to produce a widespread discontent, and not improbably to lead to results even more disastrous than that deplorable mutiny

which shattered the long-tried fidelity of our native army. And although it might appear that there is already an abundant supply of works demonstrating the fallacy of those opinions (on the question of land tenure, it might be sufficient to refer to the works of our esteemed colleague, General Briggs), yet he was satisfied that the members of this Society, especially those fresh from India, may perform a very valuable service to their country, and highly enhance the reputation and usefulness of the Society, by the frequent communication of papers calculated, not only to illustrate the ancient literature and antiquities of the East, but to present to those who read our Journal or attend our meetings, a lively picture of its present condition and of the changes which, often unperceived or unheeded by the Government, the circumstances, opinions, and feelings of the people, more especially of their leading classes, are slowly but surely undergoing. He had always thought that details of the circumstances of single villages, collected on the spot or gathered from the lips of the inhabitants, might be made eminently interesting and instructive; and he would venture to suggest that by a simple record of such observations, the result of enquiries in single villages, situate in different districts, and occupied by different races or castes, the members of the Society, especially non-resident members still abroad, might greatly enrich our transactions, and contribute to them matter not only of high interest to the curious inquirer, but of essential value to the legislator and the statesman.

Sir Frederick Halliday, K.C.B., having seconded the motion, it was duly carried, and Sir Henry Rawlinson returned thanks to the meeting as follows:—

It is no easy task to fill with credit the office of Director, lately held by one so able as the lamented Professor Wilson. I can only assure the meeting that I am animated with an equal interest in the cause, and will do my best to fulfil the duties of the office. I thank Mr. Mackenzie for the flattering terms in which that gentleman has spoken of me, and I echo most sincerely that which has fallen from him in respect to the impolicy, as well as the injustice, of infringing the rights of our Indian fellow-subjects, by interfering with their tenure of the land. The Government would, however, from the tenor of the recent debate on the subject, appear to be aware of the danger of such an interference, and I trust, therefore, that the fears expressed by Mr. Mackenzie, are never likely to be fulfilled.

It was then proposed by E. C. Ravenshaw, Esq., seconded by T. Ogilvy, Esq., and unanimously adopted:

"That the thanks of the meeting be given to the Vice-Presidents and Council for their efficient services in managing the business of the Society."

The RIGHT HON. H. MACKENZIE acknowledged the vote for the Vice-Presidents and Council, and it was then proposed by SIR CHARLES NICHOLSON, BART.:

"That the thanks of the Society be tendered to the Committee of Agriculture and Commerce, and especially to its Honorary Secretary, J. C. Marshman, Esq., for the valuable papers communicated during the past year."

In moving this resolution SIR C. NICHOLSON stated as follows:—

It had been appropriately observed by their Chairman, Sir H. Rawlinson, that the objects of the Royal Asiatic Society were twofold—practical as well as scientific. He (Sir C. Nicholson) believed that few objects, at the present moment, could be regarded as of greater importance as affecting our national welfare than those relating to the capabilities of India in the production of cotton. He had, within the last fifteen months, had an opportunity of visiting those Presidencies; and, although his journey was rapid, and his opportunities of observation limited, he had, nevertheless, arrived at certain convictions respecting our great Indian Empire, which, but for such brief personal experience, he should never have otherwise acquired. He might say, generally, that two conclusions had been forced upon his mind. One was the difficulty, if not impossibility, of any one being able properly to appreciate India, or to deal with its vast and complicated interests, who had never been in the country. The other was as to the vast, and he would say unlimited, capabilities of India for the production of the great staple article upon the supply of which the prosperity of the manufacturing population of England so largely depended. He was satisfied that it only required time, and the increased facilities of transport which were now being so continually carried out by means of railways and water communication, to enable our Indian possessions to meet all the demands of our manufacturing industry. It was not in cotton alone, but in sugar, tea, coffee, and all the varied vegetable productions of the tropics, that India had unbounded (though, at the present moment, to a great extent untried) capabilities. It was most desirable that enquiries such as those instituted by the Royal Asiatic Society should be prosecuted. He might add that much interest would be felt in investigations such as these here referred to, in other parts of the British Empire. The northern portions

of Australia bore many points of resemblance to India in climate and soil, and good efforts were being made in that direction towards the cultivation of the cotton plant. The reports which had emanated from the Committee of this Society would be highly prized by the colonists of Queensland, and would, he doubted not, be found most useful in the hints and directions they afforded. Before concluding the few brief remarks he had to offer, he would just allude briefly to another topic. Much credit had properly been accorded to the government of India for its desire to preserve the ancient monuments of that country. On a recent occasion, however, when at Delhi, he had noticed with regret that one of the great Asoka pillars or *lats*, on the north side of the city, and near the line of entrenchments occupied by our troops during the late mutiny, was lying prostrate on the ground, broken into two or three fragments, and in a position where it was constantly liable to abrasion by carts and carriages passing in its neighbourhood. He suggested whether some attempt should not be made either for its re-erection, or, at all events, for enclosing it within a fence, so as to protect it from further injury.

The motion having been seconded by EDWARD NORRIS, ESQ., was adopted *nem. con.*, and MR. FINCHAM, in returning thanks for the Committee of Agriculture and Commerce, expressed how much he regretted the absence of the Honorary Secretary, Mr. Marshman, to whom they were almost entirely indebted for the valuable communications which had been mentioned in the Report. The revival of the Committee, after being twenty years in abeyance, appeared to him expedient under the trying circumstances in which the great cotton interest was placed by the failure of the supply of the raw material, and in the hope of aiding, in some degree, the efforts of Government to meet the exigency. He regretted that the attendance of Members had not been so numerous as had been anticipated.

It was finally proposed by GENERAL BRIGGS, and seconded by J. W. BOSANQUET, ESQ.:

"That the thanks of the meeting be given to the Secretary, to the Honorary Secretary and Librarian, and to the Treasurer, for their respective services since the last anniversary."

In proposing this motion, GENERAL BRIGGS observed in a few words that the duties undertaken and so efficiently performed by the several Officers of the Society included in its terms, merited their cordial thanks, and he had little doubt that they would be given unanimously.

E. Norris, Esq., Honorary Secretary and Librarian, having replied in the name of the Officers, Captain Eastwick and Mr. Edgeworth were solicited to undertake the duties of Scrutineers; and the Ballot being had recourse to for the Election of Officers and six new Members of Council, the following result was declared by the Director, who further congratulated the Society on having secured the support of General Briggs, as one of the Vice-Presidents, and paid a well-merited tribute to his long and able service in the cause of Oriental Literature.

Director—Major-Gen. Sir H. C. Rawlinson, K.C.B., D.C.L., F.R.S.

Treasurer—Edward Thomas, Esq.

Secretary—James Wm. Redhouse, Esq.

Honorary Secretary and Librarian—Edwin Norris, Esq.

Council—Thomas Bazley, Esq., M.P.; J. W. Bosanquet, Esq.; John Dickinson, Esq.; Mounstuart Elphinstone Grant Duff, Esq., M.P.; M. P. Edgeworth, Esq.; James Fergusson, Esq.; Frederick Fincham, Esq.; Professor T. Goldstücker; Sir Frederick Halliday; John C. Marshman, Esq.; Edward Stanley Poole, Esq.; Patrick Boyle Smollett, Esq., M.P.; Col. W. H. Sykes, M.P., F.R.S.; Dr. Forbes Watson; Major-Gen. Sir A. S. Waugh, C.B.

At the conclusion of Sir H. Rawlinson's eulogium, General Briggs again rose and said, that he had great pleasure in offering his thanks to the meeting for the honour conferred on him by his election, and especially to the gallant Chairman for his encomiums, and to the Right Hon. Holt Mackenzie, who had also in his speech adverted to the services of the gallant General as a Member of the Society, and particularly to his labours in illustrating the nature of landed tenures in India.

After which, the gallant General continued:

"I believe I am one of the oldest surviving Members of this Society. It is true I have occasionally served on its Council, and have from time to time contributed to its Transactions; but it cannot be expected at my time of life that I should be able to do much more for it, and I consider the honour of a Vice-Presidentship now conferred, a sort of decoration, a kind of K.C.B.-ship, for services performed during a very long career.

"It is more than sixty-two years since I first sailed for India, and I have continued in the public service till the present time. Thirty-three years of that period have been

spent in India and in Persia in active employ. It has been my pleasure as well as my duty to study the languages and the institutions of the people among whom I was placed, and occasionally to publish, through this Society and other channels, the results of my investigations. As my Right Hon. friend has especially adverted to my labours on the subject of the landed tenures of India, I may at such a time as the present offer an opinion in support of what he has so clearly stated to-day on the indefeasible right of certain classes of our native subjects to the lands they occupy, or which are included within the recognised limits of any township. With respect to the Madras Presidency, to which I belong, I am prepared to show that, with the exception of the land on which Fort St. George stands, partly purchased, and partly conquered from the Portuguese, the Government neither had nor has a right to any spot of land as large as that on which this house stands unless it has been regularly bought. In illustration of which, I may advert to an instance wherein one of the Judges of the Small Court in Madras was compelled very lately to pay for a spot of land on the sea-shore which he desired to enclose, and on which he wished to pitch his tents, before he could do so. The purchase was concluded with the tenant for £10; but the superior landlord afterwards disputed the validity of the sale, and the Judge had to pay £5 in addition, to render the sale valid. This anecdote I had from the Judge himself, whom I am in the habit of seeing every day.

The gallant General said he might say much more on this subject, but he would not detain the meeting any longer, beyond repeating his sense of the honour conferred on him, the duties attendant upon which, as far as his health and other circumstances permitted, he would endeavour to fulfil."

Sir Henry Rawlinson then declared the meeting adjourned to Monday, the 1st of June.

ABSTRACT OF RECEIPTS AND EXPENDITURE OF THE ROYAL ASIATIC SOCIETY FOR THE YEAR 1862.

RECEIPTS.

	£ s. d.	£ s. d.
Resident Members, at 3 guineas	481 19 0	
Non-Resident Members, at 1 guinea	59 17 1	
Original Members, at 2 guineas	14 14 0	
'ears paid up	28 13 0	
		585 3 1
nposition:—J. H. Nelson, Esq.		10 10 0
nations:—India Council	210 0 0	
General Sir C. Hopkinson	2 2 0	
		212 2 0
idends on 1,200*l.* Consols	38 19 8	
e of Publications:—Quaritch ...	32 6 3	
House	2 1 6	
	34 7 9	
		73 7 5
Total receipts...		881 2 6
ance at Banker's 1st January, 1862	328 19 3	
s Cheque passed to account of 1861	18 4 7	
	310 14 8	
ance in Treasurer's hands 1st January, 1862 ...	12 13 8	
		323 8 4
		£1,204 10 10

EXPENDITURE.

	£ s. d.	£ s. d.
House Rent for one year...	280 0 0	
Assessed Taxes, do.	19 17 2	
Parochial Rates do.	36 9 2	
Water Rate do.	5 19 0	
Fire Insurance do.	5 12 6	
		347 17 10
House Expenses, 19*l.* 10*s.* 9*d.*; Housekeeper's Wages, 36*l.*	55 10 9	
Coals, 7*l.* 12*s.*; Gas, 3*l.* 1*s.* 9*d.*	10 13 9	
		66 4 6
Salaries:—Secretary, 90*l.*; Clerk, 65*l.*; Porter, 54*l.* 12*s.*	209 12 0	
Collector's Commission	15 0 0	
		224 12 0
Periodicals	4 6 0	
Stitching Journal	6 0 0	
Home and Foreign Postage and Receipt Stamps ...	17 15 11	
Sundries	14 1 3½	
Advance to Committee of Agriculture & Commerce	25 0 0	
		67 3 2½
Liabilities of 1861 paid:—Printers	216 0 8	
Stationers	14 17 9	
		230 18 5
		936 15 11½
Total Expenditure		
Balance at Banker's 31st December, 1862	247 0 8	
Ditto in Treasurer's hands do.	20 14 2½	
		267 14 10½
		£1,204 10 10

We, the undersigned, have audited these accounts, and are satisfied with their correctness,

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THOS. OGILVY, }

Amount of Society's Fund, Three per cent. Consols £1,200 0 0

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1863.

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